# Trains

25¢

March, 1947

The Illustrated Magazine of American Railroading

# the *New* Empire Builder

## *custom-built for pleasant, faster travel*

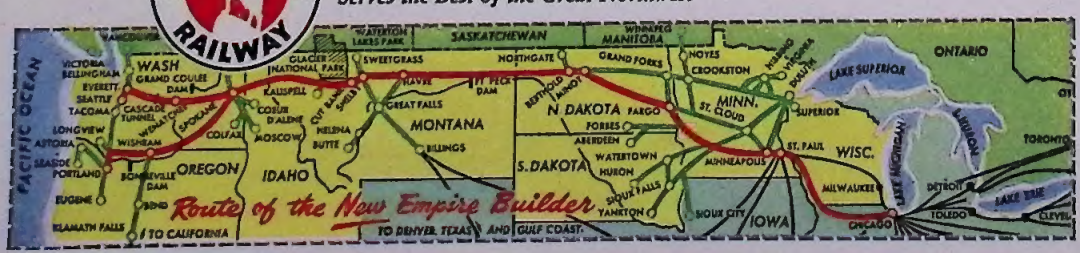
A new generation of a long-distinguished fleet of transcontinental trains—Great Northern's *New* Empire Builders. The *first* modern, sleeping car-coach trains built since the war, the New Empire Builders inaugurate the *first* streamliner service between Chicago and the Pacific Northwest on a daily 45-hour schedule. These sleek, colorful, diesel-drawn trains are custom-built for comfortable, refreshing travel. New style coaches . . . duplex roomettes . . . spacious bedrooms . . . cheerful lounges . . . gay coffee shops . . . and charming dining cars with Great Northern's famous food service. The *New* Empire Builders—modern trains designed for modern travelers.

*New design duplex roomettes . . . ideal for the passenger who desires complete privacy and comfort.*

*New style Day-Nite coaches . . . more room for each passenger, more comfort and convenience.*

GREAT NORTHERN RAILWAY

*Serves the Best of the Great Northwest*



# Trains

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March 1947

Cover Photo. By G M. Best. - - - - - 1
The privately owned Grizzly Flats Railroad on Ward Kimball's estate, San Gabriel, Calif.

Railroad News and Editorial Comment. By A. C. Kalmbach. - 4

On the Canadian Pacific at Field, B. C. Special photo feature. 12

Southern Pacific Narrow Gauge. By Lucius Beebe. - - 14
Last-but-one narrow-gauge line west of Colorado.

Modern French Steam Locomotive. By Alain Madle. - - 22
High-pressure steam operates six steam motors.

Oahu Railway & Land Company. Photos by Kent W. Cochrane. 26
1947 is last year of the island railroad's operation.

Spuyten Duyvil: Third Trick. By Herman Rinke. - - - 38
The night's activities in a mainline interlocking tower.

"Scoot" at Wauwatosa. Photo. - - - - - 44

Edison: Railroad Man. His contributions to the railroad industry. 45

Huntingdon & Broad Top Mountain. By A. M. Rung Jr. - 46
Bridge route between Pennsylvania connections.

Two Old Jersey Central Engines. Special photo feature. - 53

Railroad Mail. - - - - - - - - 58

Short Features. - - - - - - - 60

New Railroad Book. Review. - - - - - 61

*"Any apprehension that the railroads might forfeit their place in the future by reason of technological obsolescence is dispelled by the current industry-wide modernization program being carried out at an estimated cost of $1.6 billion—the greatest face-lifting treatment ever undertaken by the railroads."—Lynn Mahan, Director of Public Relations, American Locomotive Company.*

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# Diesels on the Pennsylvania

Only a few short years ago the K-4 Pacific, one of the finest steam locomotives ever designed, ruled supreme on Pennsylvania Railroad rails west of Harrisburg where the eastern trolley wires end. But then came the T-1, the epitome of modern steam locomotive design, an eight-drivered machine with four cylinders, poppet valves, and everything else to make for better balance, more efficient steam distribution, and increased horsepower at high speeds. On tests the T-1 showed its stuff by turning out more drawbar horsepower than a 5400 horsepower Diesel at all speeds over 26 miles an hour. The T-1 was the big coal road's answer to the challenge of the Diesel. It would pull the same trains west of Harrisburg that the GG-1 electrics hauled over the New York and Philadelphia divisions. It would give the snappier action of steam at high speeds, the economy of low-priced coal fuel.

But last month as the 52 T-1's moved their quota of Pennsylvania Railroad east-west blue ribbon trains the road announced a $15 million order for Diesel-electric road locomotives, including 19 6000 horsepower passenger locomotives and only six 7500 horsepower freight jobs, thus striking the glove sharply on the T-1's wrist. With engines in service this makes 48 road Diesels. By the end of this year practically all principal Pennsylvania Railroad through passenger trains will be Dieselized.

The modern steam locomotives will, of course, continue to be used, but the Diesels will get the better assignments, working mostly on the fast long distance runs with quick turn-arounds to secure maximum mileage. The old faithful K-4's will be stepped down still further.

Has the T-1 failed? The question popped everywhere in Pennsylvania territory as the Diesel story hit the newspapers. Enginemen who had handled the big four-cylinder machines argued their merits, and there were good men on both sides. Some had found the T-1's touchy on the throttle, with the quick response of an automobile accelerator rather than the delayed action of a conventional piston valve engine. A few said the T-1 is slippery, but still others said the engines can't be excelled once one gets the feel of the throttle. Test reports and general performance seem to uphold the latter viewpoint. Also there is no doubt whatever about the marvelous performance of the very similar four-cylinder Q-2 in freight service.

Pennsylvania Railroad motive power policy has clearly changed in the past two or three years. Considering the road's long-time pre-eminence in steam locomotive engineering it seems most likely that the shift was dictated by the changing economic relationship of coal and oil as fuels.

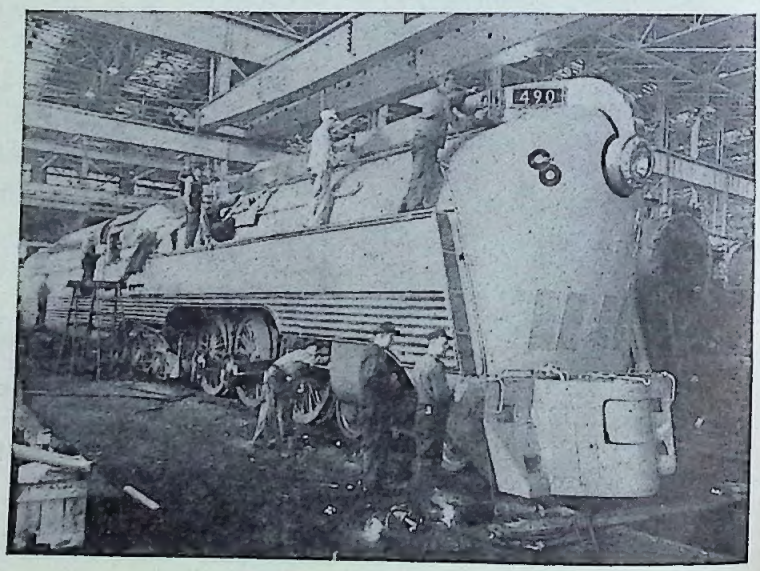
The huge traffic of the eastern electrification is still handled by coal power, but the coal is burned with the extreme efficiency of the electrical generating plant. Sometime, when conditions for large scale construction are more favorable, that same efficiency of coal-generated electricity may well be extended westward over the Alleghenies to Pittsburgh. Meanwhile work goes ahead on both the Pennsylvania's own coal-burning direct-drive duplex-turbine experiment and the joint effort with other coal-burning roads to develop the coal-burning gas-turbine.

## Safety: Trains vs. Planes

With safety very much in the public eye, the Interstate Commerce Commission has issued a statistical summary of railroad and commercial airline fatalities, relating both to a "per hundred million mile basis." The study shows that at all times in the 18 years covered by the study rail travel has been much safer than air travel, but that the safety of plane travel has been increasing until in the latest period covered the plane fatality rate is only 10 times greater than the rate on trains.

The table shows that even in the most unfortunate railroad year, 1938, when two western transcontinental trains had disastrous wrecks, one at the hands of a deliberate train wrecker and the other because of a flash flood, a man could still expect to travel about 300 million miles by train before getting into fatal trouble. Now the figure is 450 million miles, a figure far in excess of the "safety expectancy" of any other method of commercial travel and not even

**The first streamlined steam locomotive on the Chesapeake & Ohio left the Huntington, W. Va., shops of the road recently and is now in temporary service on various parts of the line. With four others it will pull new daylight passenger trains between Louisville and Ashland and Charlottesville and Newport News.**



# *Here it is! A new service on the Chesapeake & Ohio*

# "CHARGE-IT-AS-YOU-GO" TRAIN TRAVEL

***You can reserve space by phone, then after you board the train, charge it on a Credit Card. Apply for your C & O Credit Card now!***

RECENTLY the Chesapeake & Ohio announced its intention of installing, as soon as possible, a simple "Credit Card" plan and reservation by phone. Now that plan is here—to eliminate the red tape from train reservations.

No longer do you have to spend your valuable time waiting in ticket lines. No longer do you have to dash down to the station to pick up your reservations. The C & O does all your scurrying and worrying for you.

All you do is reach for a phone. For now—and this is new—you can reserve space in reserved-seat coaches as well as Pullman* space.

***For Pullman Space,*** phone in your name and Credit Card number. Go to your reserved space aboard the train, and charge it on your C & O Credit Card or pay cash if you prefer.

***For Space in Reserved-Seat Coaches,*** simply telephone in advance, giving your name. Go to your reserved seat on the train, and pay for your ticket there, or charge it on your Credit Card if you prefer.

And there's another important feature to the new Credit Card. You can use it to charge any C & O service on the train or in the station. This includes meals in dining cars and baggage service.

### *Apply For Your Credit Card Now!*

You're invited to apply for a C & O Credit Card, right away. Just call any Chesapeake & Ohio Ticket Office for an application . . . or write Chesapeake & Ohio, Terminal Tower, Cleveland 1, Ohio. Do it today and take immediate advantage of this new traveling convenience.

The "Charge-It-As-You-Go" Plan is the latest—but not the last—of many far-reaching improvements pioneered by the Chesapeake & Ohio to make rail travel more comfortable, more sensible.

**To hold Pullman space by phone, it will be necessary to have a Credit Card. Pullman space, if not used, must be properly cancelled, or it will be charged to your account.*

## CHARGE-IT-AS-YOU-GO—ON THE C & O

THE CHESAPEAKE & OHIO RAILWAY, TERMINAL TOWER, CLEVELAND 1, OHIO

to be mentioned along with the 35,000 fatalities per year in auto accidents.

The I. C. C. table follows:

| Year | Steam railroads* | | Domestic airlines† | |
|---|---|---|---|---|
| | Number of passenger fatalities | Rate per 100,000,000 passenger-miles | Number of passenger fatalities | Rate per 100,000,000 passenger-miles |
| 1929 | 89 | 0.286 | 14 | 18.27 |
| 1930 | 45 | .167 | 24 | 28.57 |
| 1931 | 35 | .160 | 25 | 23.49 |
| 1932 | 19 | .112 | 19 | 14.96 |
| 1933 | 48 | .293 | 8 | 4.61 |
| 1934 | 35 | .194 | 17 | 9.05 |
| 1935 | 25 | .135 | 15 | 4.78 |
| 1936 | 32 | .142 | 44 | 10.10 |
| 1937 | 27 | .109 | 40 | 8.39 |
| 1938 | 75 | .346 | 25 | 4.48 |
| 1939 | 38 | .168 | 9 | 1.20 |
| 1940 | 80 | .337 | 35 | 3.05 |
| 1941 | 39 | .133 | 35 | 2.35 |
| 1942 | 110 | .205 | 55 | 3.71 |
| 1943 | 262 | .298 | 22 | 1.34 |
| 1944 | 249 | .260 | 48 | 2.12 |
| 1945 | 142 | .155 | 76 | 2.17 |
| 1946‡ | 78 | .222 | 56 | 2.11 |

*Includes fatalities to passengers on trains and travelers not on trains in accidents involving train operation.

†Source: Civil Aeronautics Administration, *Statistical Handbook of Civil Aviation*, Dec., 1945 and Oct., 1946.

‡First half.

## On the Banks of the Wabash

Engineers are doing preliminary work on the Monon's proposed high bridge and embankment which will carry its line across the Wabash River at Delphi, Ind., without the present heavily graded and curved line down into the river valley and out again. This will be one of the largest single items in President John Barriger's program to make a super railroad out of the Indianapolis line.

A great deal of engineering is required on such a program, but some of the details of Monon improvement are already taking form. Road Diesels are in operation and others are on the way. Twenty-eight army hospital cars are being rebuilt into modern coaches, so that train service can be modernized immediately without waiting for slow deliveries, and by end of this month the first car will be in service. Heavier rail will be laid on 57 miles of main line, with old main line rail going to improve the Michigan City line. The backshop at Lafayette will be changed into a Diesel shop, a number of interlockings installed at railroad grade crossings, and the communications system will be improved with new telephone equipment and replacement of the last of the telegraph dispatching lines.

## New Train

Not a new train but a new service is the Union Pacific's step up to daily operation of the *City of Portland* streamliner between Chicago and the Pacific Coast city. Before February 15 this train ran only every fifth day. Five sets of equipment are required for the daily schedule and have been obtained by reassignment of the road's most modern streamlined cars. Each train is pulled by a 4000 horsepower Diesel. The running time is 42 hours, with a 4 p. m. leaving time from Chicago and an 8 a. m. arrival at Portland. Make-up is baggage-express, three coaches, articulated two-car diner-dormitory car, club-lounge with barber shop and bath, four sleepers with open sections, roomettes, bedrooms, compartments, and drawing rooms. Eastbound arrival in Chicago is at 1:10 p. m., making principal eastern connections.

## Railfan Trips

Date uncertain: Last time trip to be run on short notice over Pittsburgh, Shawmut & Northern before abandonment. Write Joint Railfan Trip Committee, Lackawanna Terminal, Hoboken, N. J.

March 9: Hagerstown & Frederick Electric Railway, Frederick, Md., 9:10 a. m. Fare $2.50 in advance to C. J. Murphy, 1522 White Place S. E., Washington 20, D. C.

March 16: Philadelphia & Western and Philadelphia Suburban, leaving 69th Street Terminal, Philadelphia, 10:30 a. m. Fare $2.25 if sent before March 10 to Joint Railfan Trip Committee, Lackawanna Terminal, Hoboken, N. J.

March 30: Interborough Rapid Transit, New York, including elevated lines, subways, and shops. Flat car for observation. South Ferry El station 10 a. m. Fare $2.25 if sent before March 24 to Joint Railfan Trip Committee, Lackawanna Terminal, Hoboken, N. J.

April 13: Norfolk Division of Virginia Transit Company. Write R. S. Crockett, 6319 Blair Road, N. W., Washington 11, D. C.

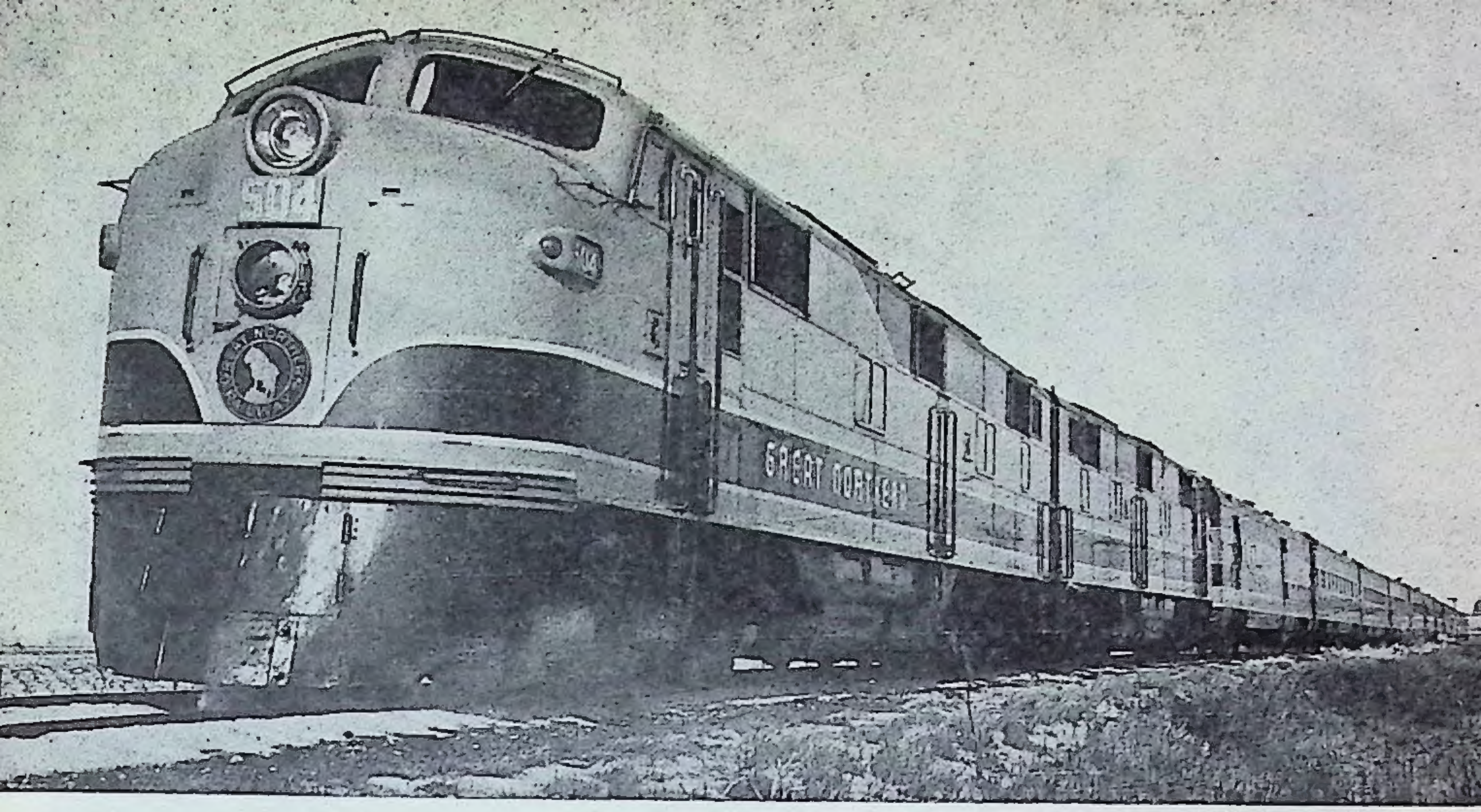
## The New Empire Builder

The first postwar transcontinental streamliner, and in fact the first postwar streamliner with sleeping cars, is the new *Empire Builder*, which went into service over the Burlington-Great Northern route between Chicago and Seattle on February 23. Of course, the date refers only to the leaving time of the first two trains, for a trans-continental daily train is in reality several trains (in this case five complete sets of equipment, one owned by the Burlington and four by the Great Northern). When the first two trains left Chicago and Seattle, four of the old *Empire Builders* were still en route, and by February 25 when the first two new *Empire Builders* finished their runs, the one from Chicago pulled into Seattle simultaneously with the old unit which had left Chicago a day earlier. For the new train is on a fast 45-hour schedule, first time that Seattle has had two-night daily train service from Chicago.

Each train has a mail-baggage car, 60-seat local coach, three 48-seat through coaches, a coffee shop-lounge car, a diner, four sleepers, and an observation-lounge. Equipment was built by Pullman-Standard, the 4000 horsepower locomotives by Electro-Motive. The cars are of typical Pullman lightweight welded steel construction, but with an interior decorative scheme of soft colors much more homey and livable than the bright colors and stainless steel trim so popular in modern design. The Indian motiff of the Northwest is carried out by such items as a series of Indian paintings set between the windows of the observation-lounge.

The dining car arrangement is made more roomy and more appropriate for long distance service by using the old setting of two-place tables on one side of the aisle and four-place tables on the other side. The sleeping cars are the first (except for the prewar experimental car) to use the duplex roomette. One of the novel conveniences used for the first time is ice water on tap at all sections. The seats in the through coaches are fitted with leg rests which can be pulled down from the seat ahead to support the entire leg, thus allowing comfortable napping or sleeping.

A new member of the crew is the uniformed passenger representative whose primary function will be to assist travelers. He will be able to use a public address system, connected in all cars except sleepers, to announce important train information and call




Burlington Route photograph

**The new Empire Builder, Burlington-Great Northern Chicago-Seattle train, is first postwar transcontinental streamliner.**

attention to points of scenic and historic interest. The schedule, with 1 p. m. leaving time from Chicago, allows a fine view of the Burlington's scenic Mississippi River line the first afternoon, of the Glacier National Park Rockies the second afternoon, and of the shore of Puget Sound before the 8 a. m. arrival in Seattle. The leaving time from Chicago gives the "Q" its first midday streamlined service from Chicago to the Twin Cities, supplementing the early morning and late afternoon departures of the *Twin Zephyrs*, whose schedules are partly predicated on their daily round-trip performance. The road does not wish to add extra cars which would necessitate switching at Minneapolis, but space is available to at least the extent of reservations from the Twin Cities westward.

Without breaking their stride the older trains went on, with slight changes of schedule, under a time-honored name, the *Oriental Limited*. The *Oriental* was originally established by James J. Hill in 1905 to memorialize the establishment of a new trade link with the Orient. In 1924 the *Oriental Limited* was re-equipped and called the finest train in America. But when the present Cascade Tunnel was opened in 1929 a new train took to the rails, named in a flash of advertising man inspiration after Hill himself and after the role his railroad had played in building the great Northwest. The *Oriental Limited* took second place, and in the dark days of 1931 was removed from the road entirely.

The exterior color scheme of the *Empire Builder* is deep orange and olive green, used in wide stripes along the length of the train. This will not only trademark the train, but will add extra visibility. The braking is electro-pneumatic.

The faster schedule is achieved not so much by higher maximum speeds as by elimination of stops and slowdowns. The old *Empire Builder* was accompanied on its transcontinental run by only one other train, the *Fast Mail* No. 27, which carried only a few coach passengers and did not tarry between important stops. Hence, to provide service at many points on the line, the schedule of the *Empire Builder*, like that of other transcontinental trains to the Pacific Northwest, was liberally sprinkled with conditional stops and had to be slow enough to allow for the contingency of making quite a few of these conditional stops on the same run. Now with the *Oriental Limited* handling the excess stops, the *Empire Builder* moves right through.

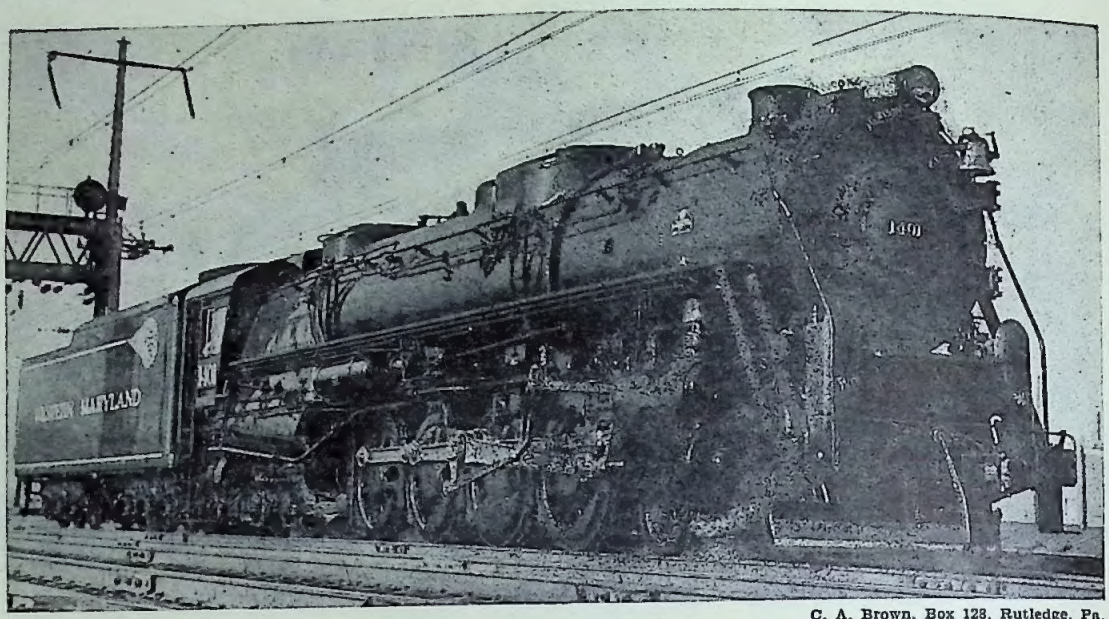
## Mass-Produced Cars?

Chesapeake & Ohio, instead of preparing detailed specifications and asking for bids on the customary custom-built basis, asked car companies to base their bids for 1600 box cars on their own specifications. The contract was awarded to Pullman-Standard on this basis.

Laymen have often asked why there cannot be a greater standardization of equipment. Electro-Motive took the initiative in motive power and offered a standard, mass-produced line, refusing to depart except in color scheme and minor fittings. Steam locomotives and cars are usually produced to the railroad's design, with colaboration by the builder. A Lima-built locomotive can be told from a Baldwin job, and yet each incorporates the personal idiocyncracies of the railroad engineering department for which it was built. Likewise a Budd-built streamliner incorporates many standard Budd features and a Pullman-built job looks like a Pullman creation, but each is designed to suit the railroad which pays the bills.

What would happen if car builders offered standard coaches and sleepers, with optional color schemes, right off the production line at list prices? Each railroad has special problems, perhaps more or less hand baggage, more frequent stops, a different type of passenger. Could car types be grouped to reasonably please all roads and would there be a substantial saving in cost? Could the steam locomotive take a new lease on life if built in standard models covering a wide use and horsepower range?

C&O's Robert Young has posed



C. A. Brown, Box 128, Rutledge, Pa.

**The first of 12 new 4-8-4 locomotives being built by Baldwin for Western Maryland leaving the locomotive works.**

these questions, too. He has often compared the high cost of railroad passenger cars per pound with the low cost of mass-produced automobiles. Now he is putting into effect the first concrete program to let car builders slip into mass production if they will.

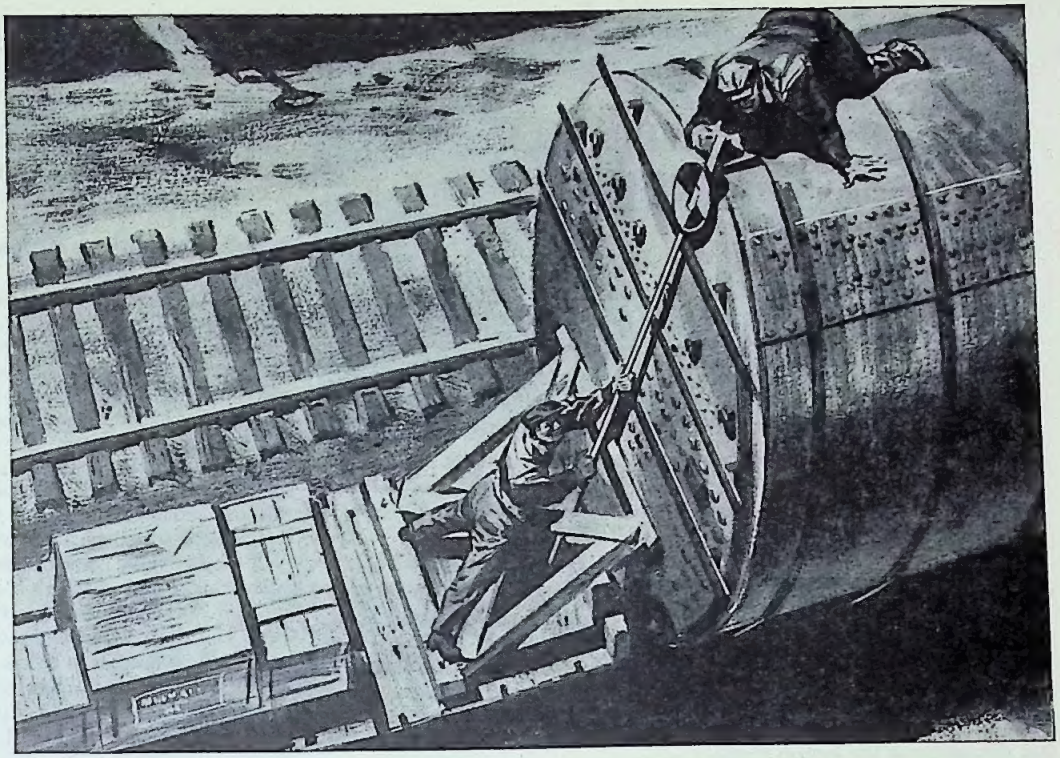
## Equipment Notes

Chesapeake & Ohio didn't include head-end cars in its order for complete new passenger equipment because the road plans to carry most mail and express in separate trains to permit faster schedules for solid passenger sections. . . . The Long Island Railroad is experimenting with modified motor cars to determine whether top speeds of 70 miles per hour will not be safe on its suburban runs. Present top speed of electric multiple unit trains is 55 miles per hour. Track has been improved by crushed rock ballast and heavier rail to permit smoother riding at higher speeds, but the principal problem at present is whether speeded up motor cars can be trained with slower cars. . . . Virginia & Truckee, romantic road of the bonanza country which still runs a colorful 4-4-0 and bright yellow open platform passenger cars out of Reno, Nev., has purchased its first steel car, a 40-foot baggage, secondhand from the abandoned Yosemite Valley. . . . 250 steel automobile cars ordered by Rock Island from American Car & Foundry are now being delivered. They are the largest ever built for Rock Island, with a 10 foot 8 inch inside clearance, and a 9 foot 6 inch width.

Baltimore & Ohio is changing all of its passenger equipment to the deep royal blue color scheme of its streamliners instead of the old standard Pullman green. . . . Long Island Railroad capacity is sorely tried during rush hours, and three double-deck suburban coaches were tried in the '30's as an expedient to get more seats in the same length of train. Success of the experiment is reflected by current delivery of 10 more such cars, with the intent of running complete double-deck trains eventually. Each car seats 134 passengers instead of 72 in single-deck cars. . . . Norfolk & Western has ordered 20 stainless steel all-room sleeping cars from the Budd Company for use in its through trains. Delivery has been promised for first quarter of 1948. Color scheme will be N&W's traditional tuscan red.

The *Sunshine Special*, joint Pennsylvania-Missouri Pacific-Texas & Pacific New York-Texas train, will be completely re-equipped and the various roads have placed orders for the necessary cars. This is in addition to the cars ordered some time ago for the projected streamlining of the original train west of St. Louis. . . . In anticipation of early completion of its merger with the Alton Railroad, the Gulf, Mobile & Ohio has ordered 121 Diesel freight locomotives, 4 passenger Diesels, 1500 box cars, 50 covered hoppers, 100 automobile cars, 10 Diesel switchers, 15 coaches, and 4 roomette sleepers. . . . The first of 61 new passenger cars for the Seaboard was delivered early last month by the Budd Company. The order includes diners, sleepers, coaches, and recreation cars for the *Silver Meteors*.

Pullman-Standard Car Manufacturing Company hopes to hit a faster production stride during 1947. It has a $250 million backlog of orders, including more than half of the 3200 passenger train cars ordered since V-J Day, and 22,000 freight cars. Production during 1946 was badly curtailed by shortages and strikes of suppliers, but in spite of these difficulties P-S completed the first postwar passenger car, a NYC coach, on February 20, the first complete postwar order of 20 coaches to C&NW on April 17, and the country's first complete postwar streamliners, two each for Pere Marquette and Chicago & Eastern Illinois. The delivery of 153 coaches to NYC by September



# He keeps a load of freight from sticking its neck out!

Here is an Erie Clearance Engineer at work.

He is making certain that a huge, oversize shipment will travel safely through tunnels, under bridges, around curves.

On-the-spot measurements like this are frequently necessary. Sometimes, specially designed blocking and bracing is needed. And Erie Clearance Engineers are even consulted while huge machinery is still in design stage, to make recommendations on the assembly of the shipment to insure effective rail handling.

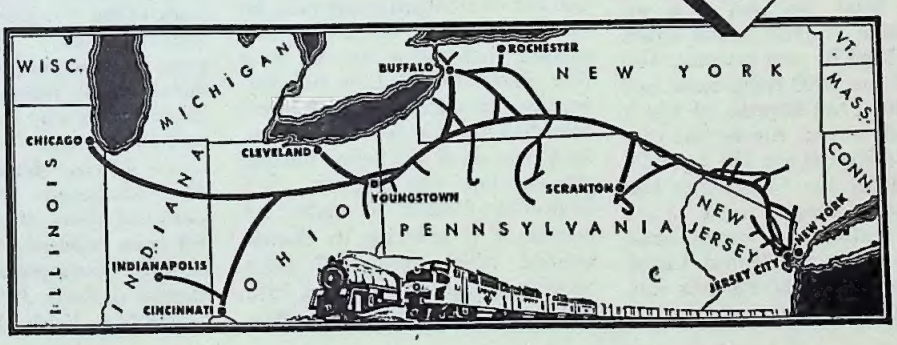
Because the Erie has the highest and widest clearances of any railroad between New York and Chicago, the Erie has become known as the "heavy-duty" road.

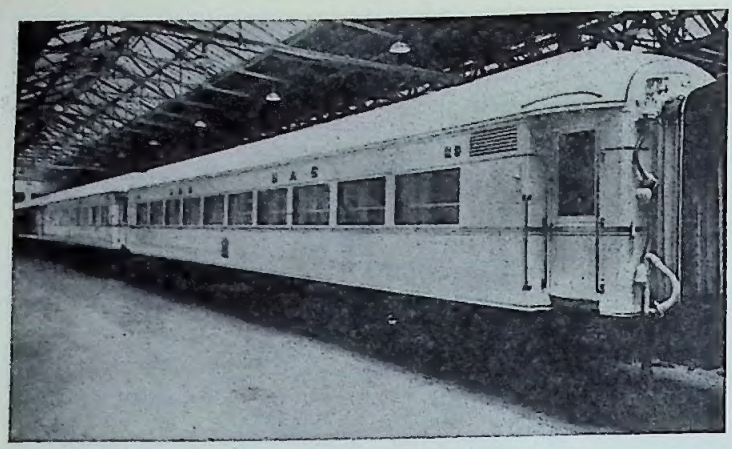
It's specialized skill and services like this, handling shipments, large or small, that make more and more shippers say "Route it Erie".

## Erie Railroad

SERVING THE HEART OF INDUSTRIAL AMERICA

ERIE





This specially built gleaming white royal train is the home of King George, Queen Elizabeth, and their two daughters during a two month tour of the Union of South Africa. American made Carrier air conditioning is a chief comfort feature.

represented the largest number of such cars ever delivered to one railroad within one year.

1000 new steel-sheathed box cars, part of a large postwar equipment program, were delivered recently to the western lines of Canadian Pacific. With grain haulage under hot discussion in the British Parliament, the new cars will have their work cut out for them handling agricultural produce as well as merchandise. . . . New C&O passenger cars will use a revolutionary new electronic temperature control instead of the older mercury type of thermostat. These controls are sensitive to 1/10 of a degree. Thermostats installed against the outside skin of the car will feel changes in weather, including the effects of shade and sun, and will work in conjunction with other thermostats inside the car to provide a closer control over flow of hot or cold air. The cars are being built by Pullman-Standard.

Deliveries of various types of new freight cars to Southern Pacific from the 5000-car orders placed in the past two years have now totaled 3600 cars and it is expected that the rest of the orders will be filled by next summer. Also on order are 5000 refrigerator cars for Pacific Fruit Express, of which SP is half owner. Among the cars already delivered are 450 specially designed for the *Overnighter* fast merchandise freight trains. . . . Central Railroad of Pennsylvania (affiliate of Jersey Central Lines) has ordered 1250 50-ton box cars from A. C. F.

## British Electrification

The Southern Railway of England is proceeding with complete electrification of all its lines, which already include the largest electrified mileage in England. Total route mileage involved is 2156. Already 150 electric locomotives have been ordered and work is starting on the London-Dover route of the London-Paris boat train, the *Golden Arrow*. By 1955 the entire southeastern section of England's railways will be under electric power and the section of the southern coast west to Cornwall will come next. All coal-burning engines will disappear, with an expected saving of 750,000 tons of coal a year. Both freight and passenger trains will be pulled by full electric power, but yards will be switched by Diesels.

## Electric Railways

First transportation service operating in or out of Milwaukee after the recent blizzard was Kenosha Motor Coach Lines. The bus company's vehicles have steel wheels and run on standard gauge rails, for KMC has more electric railway mileage than motor bus. Its West Side Rapid Transit Line and Milwaukee - Waukesha - Hales Corners suburban line was restored to service almost a full day before the first city car line was dug out. . . . Utah-Idaho Central has applied for permission to abandon its electric railroad which runs 94.7 miles north from Ogden to Preston, Ida., with an 11.8 mile branch to Plain City. At present only two passenger trains are run each way, other traffic being handled by bus. Freight is also handled by electric power. A joint terminal in Ogden with the Bamberger Electric provides a through route from Salt Lake City to Preston.

## Railroad Reading Matter

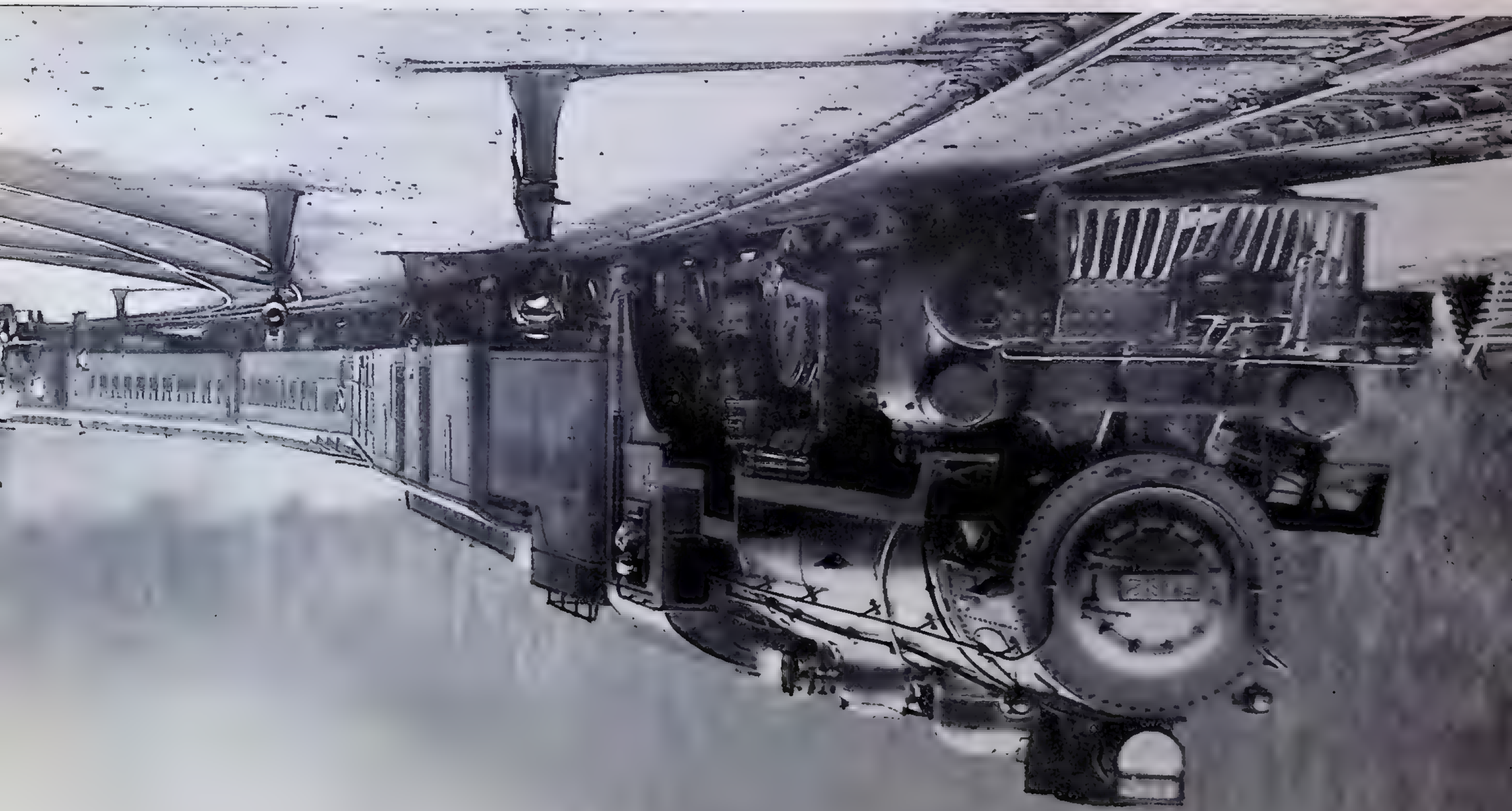
Latest publication of the Railway & Locomotive Historical Society is Lucius Beebe's "Narrow Gauge Railroads of Colorado" issued as Bulletin No. 67A. The 47-page well-illustrated bulletin is chiefly concerned with slim gauge pikes in southwestern Colorado. Copies may be had by applying to the society, Baker Library, Harvard Business School, Boston, Mass. Price $1 for members; $2 to others. . . . Another little book of unusual interest is Frank Parker's "Anatomy of the San Francisco Cable Car." The study explains the working of grip and cable with detailed drawings and 16 full-page photos of cars and employees. Published by James L. Delkin, Stanford University, California, this 62-page book sells for $3.50, cloth; $2, paper-bound. . . . Second annual commemorative calendar issued by San Francisco Chapter, Railroadians of America, is devoted to Denver, South Park & Pacific, includes historical notes, map, and roster. Copies may be had for 50 cents each from the chapter, 542 18th Avenue, San Francisco, Calif.

Of interest to equipment men and economists is "China's Railway Rolling Stock" — a study of postwar purchase — by Chuke Ling. This 110-page paper-bound monograph may be obtained from the University of Washington Press, Seattle, at $1.50 a copy.

Juice fans will delight in recently published booklets on electric lines in scattered parts of the country. Henry D. Lentz's newest work called "Trolley Lines in the Williams Valley" has some 50 pages on traction lines in the anthracite coal region of Pennsylvania. Copies may be had from the author, Lebanon, Pa., at $1 each. . . . A 24-page detailed history of the "Bamberger Railroad" with maps and roster of equipment has just been released by *Interurbans*, 1414 S. Westmoreland Ave., Los Angeles 6, Calif. Price not stated. . . . In New England the National

## On the Canadian Pacific

In the heart of the Canadian Rockies the *Dominion* awaits the highball at Field, B. C. It has just descended what is probably the toughest part of the road, two spiral tunnels and miles of 2.2 per cent grades. The spirals in Kicking Horse Pass on the continental divide have virtually halved the old grade of 4.5 per cent by providing a new line twice as long. At Field all Canadian Pacific trains change from Mountain to Pacific time. The late Herbert Sullivan took this photo just as it began to rain, thereby giving the towering Selkirks in the background a hazy appearance.



Railway Historical Society published an attractive 18-page booklet on "The Claremont Railway," New Hampshire's last electric-powered common carrier, now operating for freight service only. Copies, at 50 cents, may be had from Roger Borrup, agent, Warehouse Point, Conn.

### The "Who's Who" Road

Devotees of the world's largest pulp magazine, the *Official Guide*, noticed something unusual a few months' ago about the listing of the 29-mile Lancaster & Chester Railway of South Carolina. Formerly it was just another fractional page short line but it suddenly blossomed out with a full page, a decorative herald, and a list of officials totaling nearly one vice-president per mile, most of them nationally known.

Cartoonist Ham Fisher of Joe Palooka fame is a vice-president. So also are Charles MacArthur, the playwright; Samuel Hopkins Adams, author of "Harvey Girls"; James Montgomery Flagg, the artist; James D. Robinson, president of the First National Bank of Atlanta; W. F. Cutler, vice-president of American Brake Shoe & Foundry Company; and many another noted character. The L&C, sporting the slogan "the Springmaid Line," is no doubt the shortest and perhaps only line to list an official newsbutcher in the *Official Guide*. This post is held by Clair Maxwell of New York. Lowell Thomas and Tom A. Burke are advertising agents, while R. J. Reynolds of the tobacco company is "marine superintendent" of a road whose biggest marine problem is the bridge over the Catawba River.

Recently the rising price of coal caused the road to do away with its four steam locomotives and buy some used Army Diesels from Italy. But the L&C was determined that children in its territory should not be deprived of the pleasure of watching steamers, so the road recently acquired and put in operation the miniature steam driven railway which had been used in amusement park service since the Charleston Exposition of 1902. It has three locomotives operating at 125 pounds pressure, four passenger cars, two flat cars, and a caboose. Trackage is one mile, to be extended this year.

Someone is quite evidently having a lot of fun with the railroad. The someone is Elliott Springs, novelist, World War I ace and industrialist, whose grandfather, Colonel Leroy Springs, bought the then narrow gauge railroad at foreclosure in 1896 for $25,000. He soon converted it to standard gauge so it could participate in interchange movements, and to assure traffic built cotton mills along the line. The Springs Cotton Mills today are good customers of the Springs railroad, and the Lancaster Cotton Mill is the largest textile mill in the world under one roof.

As impressive as its list of vice-presidents is the map which adorns the reverse side of the Springmaid Line's colorful letterhead. It is a complete railroad map of the eastern United States, with lines of the 6500-mile Southern and the 4200-mile Seaboard drawn in heavy ruling. By looking hard one can locate Lancaster and Chester, S. C., and the quarter-inch of heavy line between them. The map is labeled "Lancaster & Chester Railway System." Only the most canny reader will notice a little line of microscopic type. It says, "and connecting lines."

### In the Railroad Headlight

J. V. Manasco of Carbon Hill, Ala., is our railroad man of the month. Any railroad man will admit that if you ever get railroading in your blood, you'll always be a railroader. At the same time, newspaper men assert that once you get printer's ink in your veins, you'll always be a member of the fourth estate. Manasco is a railroad man — but he's also in the newspaper business and because he can't tear himself away from either profession, he's leading a double life as agent for the Frisco Railway at near-by Winfield, Ala., and editor and publisher of the Carbon Hill *News*.

When asked outright which profession he preferred, Manasco said he thought he liked newspapering better. But his wife spoke up just then and said she didn't believe so. "He'll never get the railroad out of him," she said.

Manasco has been with the railroad since 1916. Five years ago he purchased the *News* and although he was blind for a year with cataracts and lost two linotype operators, the *News* has never missed an

edition. The job with Frisco takes 10 hours daily six days a week. At the same time Manasco serves as Western Union operator, baggageman, and express agent. He handles all of Winfield's freight and passenger business, including four passenger and 10 freight trains daily. Until recently he kept three cows, two hogs, and a flock of chickens.

[If you know a railroad man who is outstanding in any way, we will welcome his nomination as railroad man of the month.]

### The Diner Is Fun Again

The railroad traffic rush has subsided at least enough so that eating in the dining car is again fun. No longer must one spend hours waiting in hot corridors, and once again the steward notices a customer and seats him in proper fashion. The waiters grin and recommend specialties of the day, and one can tarry over a meal without that guilty feeling of depriving someone else of a chance to dine.

### Favorite Scenery

The lady in room B, car 162 on the Milwaukee Road's transcontinental *Olympian* was obviously traveling the route for the first time. She gushed about the moonlight on the snow as the train climbed the Cascades to Snoqualmie Pass. She marveled at the horseshoe curve in the Bitter Roots and at the water rushing through the ice in St. Regis Canyon. Finally she stopped the porter as he came down the aisle and asked, "Porter, you've been over this line many times. It's all beautiful, but tell me, what scenery do you like best?" The porter answered without hesitation, "Chicago Union Station, eastbound."

A. C. Kalmbach.

# Southern Pacific Narrow Gauge

## 71 miles from Laws to Keeler, Calif., runs the Keeler branch, last vistige of the Carson & Colorado Railroad of bonanza days

BY LUCIUS BEEBE*

*Envision,* if you will, a narrow gauge railroad operating over a single track of 35-pound rails imported from Sheffield in the '80's. Every item of its rolling stock is of wooden construction built on wooden underframes, and its air brakes are something less than a model of triple valve modernity. Its single train is operated over its entire mileage three times a week, and the largest community it serves directly has a population of 300. Its two functioning turntables are hand operated; a single train crew is on duty 10 months of the year and its principal water tank supply is actuated by a windmill.

The Happy Valley Railroad?

Come again! This is the Southern Pacific!

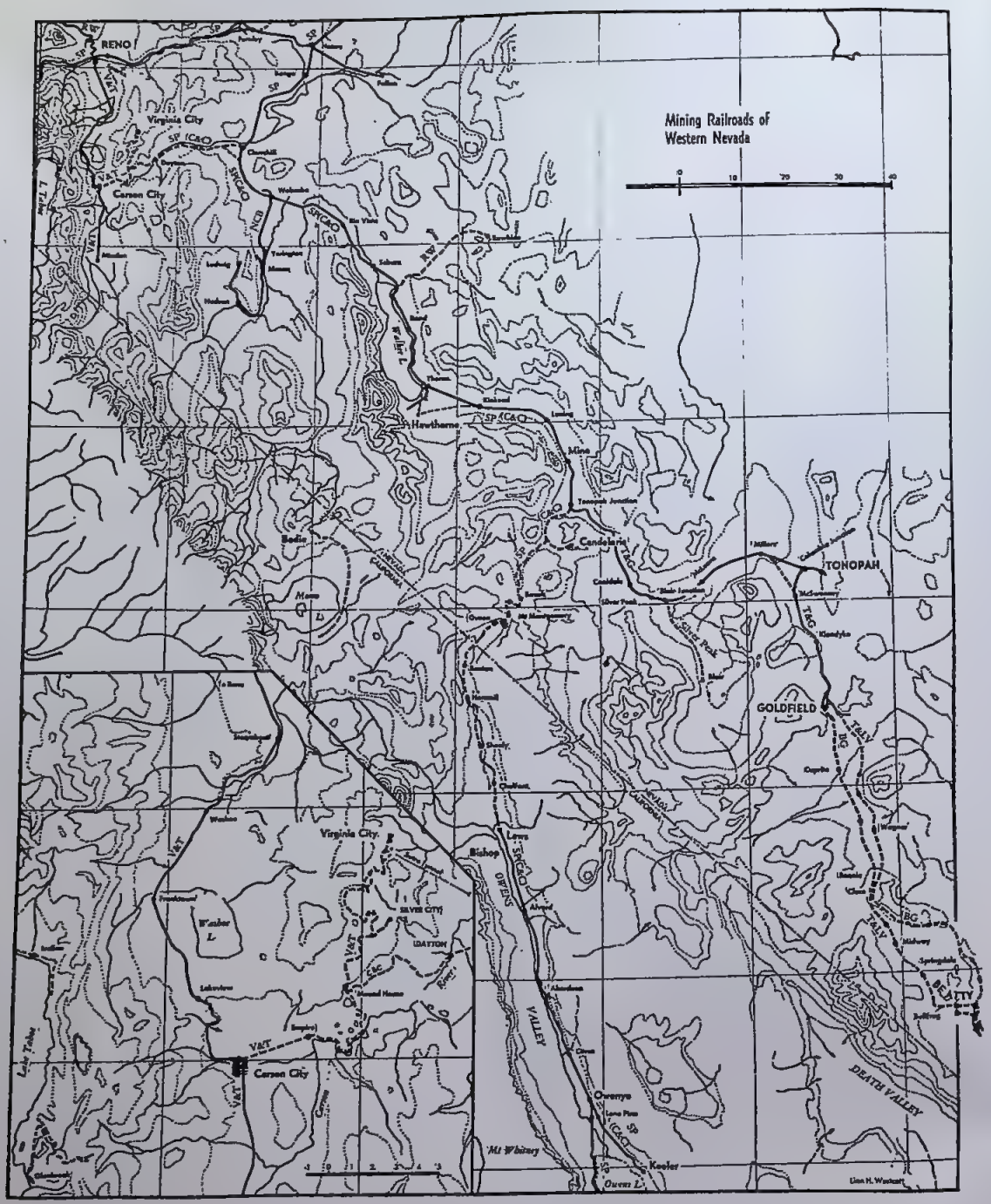
The Keeler branch of the SP's San Joaquin Division — the last but one remaining narrow gauge in the United States west of Colorado — has been variously known in its history as the Carson & Colorado Railroad, the Nevada & California Railroad, and finally by its present designation. The Carson & Colorado was incorporated under the laws of the State of Nevada on May 19, 1880, and was named for the two rivers which it was intended to connect.

The corporate history of the Carson & Colorado and the record of its various branches and trackages is a long and involved one and need not concern any but the most factual minded of railroad historians. The railroad was projected by William Sharon, Hume H. Yerrington, and Darius O. Mills, directors of the famed Virginia & Truckee Railway. Construction was commenced at Mound House, just east of Carson City, from a connection with the V&T, whose U-shaped route linked Virginia City, Carson City, and Reno on the Central Pacific. When construction began, a number of prosperous mining camps were in existence — camps like Bodie, Aurora, Benton, and Candelaria. The railroad was first built to the latter point. Candelaria had become a big silver camp in the '70's and used to freight its ore to Wadsworth. But after the railroad reached Candelaria the price of silver fell and it was deemed inadvisable to construct the line to the Colorado River as originally intended. It was extended instead to Keeler, in Owens Valley in southeastern California, to handle extensive shipments of borax

*Adapted from "Mixed Train Daily, a Book of Short Line Railroads," to be published by E. P. Dutton this fall. Photographs, by the author and Charles M. Clegg, are also from the book.

Northern terminus of the SP narrow gauge is at Laws→, where ties and ballast are carpeted with grass. Between Laws and Keeler is desert↓ interspersed with farms. To the southwest the lofty Sierras are always in view.

15




**The race to lay rails of the Carson & Colorado to Candelaria and later to Keeler was typical of a dozen or more railroad rushes in Nevada. When Tonopah and Goldfield mines made rich strikes, the Tonopah & Goldfield, Bullfrog Goldfield, Las Vegas & Tonopah, and Tonopah & Tidewater (not shown) all raced madly for the spoils. The T&G connected with SP (old C&C line) at Mina, and from there northward the old narrow gauge was widened.**

and soda from Owens Lake, as well as other mineral products.

Passing through Montgomery Pass from Nevada into California, the slim gauge line rose to an elevation of 7138 feet, for many years the highest point reached anywhere on Southern Pacific lines. The only tunnel was a timber-lined bore, 247 feet long, near the summit on Mount Montgomery. Between Tonopah Junction and Laws the line was built to avoid tunneling and had maximum compensated grades of three per cent and numerous sharp curves ranging up to 20 degrees. Some of the rails used on the historic line were manufactured in Holland in 1860.

The Carson & Colorado was inaugurated without the frontier frolic so dear to the hearts of the 19th century golden spike drivers. There were no firemen's bands nor raspberry shrubs for the ladies, no rock drilling contests nor barrels of iced beer for coon-zipping bloods and the bankers in high silk hats and broadcloth tailcoats. Such songs of the period as "Clementine" and "Old Zip Coon is a mighty learned scholar" might rejoice the spirits of other last rail layers and their crinolined guests, but Darius Mills had never been enthusiastic over the railroad, and after a two-day ride across the desert with Sharon and Yerrington he sourly remarked: "Gentlemen, it seems to me that either we have built this railroad 300 miles too long or 300 years too soon." Later, when the Carson & Colorado was sold to the Southern Pacific for $2¾ million, Mills was in faraway New York and gave the transaction scant attention, though the road was to repay the SP its purchase price in a single year out of the Goldfield bonanza.

In 1905, five years after its stock had been acquired by the Southern Pacific, the little road was absorbed into the operating and financial economy of the Nevada & California Railway, a SP subsidiary, which connected at Mina with the newly consolidated Tonopah & Goldfield. This arrangement survived until 1938, when the last narrow gauge train, powered by three

**Keeler, southern end of the old Carson & Colorado Railroad, is surrounded by desert. It is near Death Valley.**

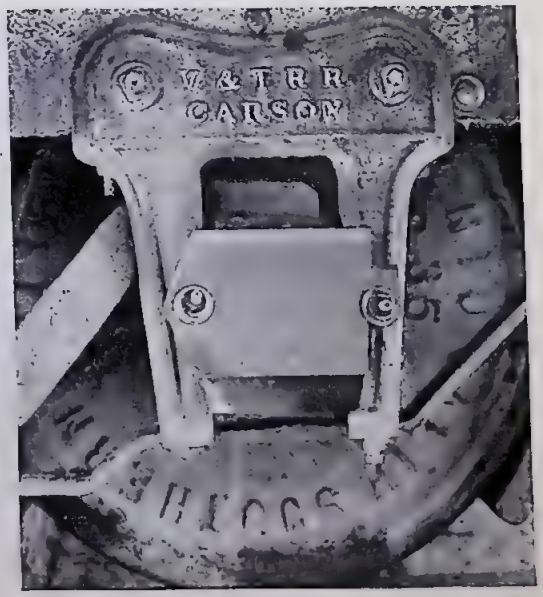
engines, rolled out of Mina and the narrow gauge connection between Nevada and California was finally severed. The portions of the original Carson & Colorado which survive today are 110 miles of standard gauge between Churchill and Tonopah Junction which form part of the Southern Pacific's Mina branch, and 71.5 miles of slim gauge between Laws and Keeler in Owens Valley.

*Keeler* is hard by the saline marshes of Death Valley and its adjacent desolation, the Panamint Valley. The desert lies all about; its presiding genius is the spirit of Death Valley Scotty. In the hot volcanic hillsides above the tracks, the aerial tramway of the Cerro Gorda mine reaches upward for thousands of feet toward a relentless cobalt heaven. Clouds of talc and soda dust from its loading tipples add a note of inferno. In startling contrast is the northern terminus, 71 miles away at Laws. Here the 35-pound three-foot iron, for the most part standing as it was laid nearly 70 years ago, comes to a gentle end in yards where Jersey and Brown Swiss cattle lie in the shade of arching trees. The ties and ballast are softly carpeted with grass as thick and green as the lawn of any great English estate. Moss grows on the lee side of the leaking water tower, and the main line, where it runs south between a pair of ineffectual cattle guards, curves away into a tranquil meadowland hedged by stately Lombardy poplars. The actual end of track is in the well-fenced yards of the United States Vanadium Company.

These are the dramatic properties which terminate the last of the California narrow gauges. The 71 miles between wander casually through the lushly upholstered farmlands of the opulent but little exploited Owens Valley, a paradise for sportsmen, mountain climbers, and lovers of scenery. Owens Valley is in Inyo County, which takes in the highest and lowest points in the United States: Mount Whitney, 14,501 feet above sea level, and Death Valley, 276 feet below the sea. On the east, the valley is hedged by the barren ramparts of the Inyo Mountains, and for miles the little railroad lies so close to their escarpment as to be untouched by the sun until nearly noon. Five miles across the alternate desert and spectacularly fertile land of the valley floor, the High Sierra astonishes tourists from nether regions with snow in July. Most of the light iron runs through meadows and green stands of trees which would have engaged the attention of Watteau, but there

are desert stretches better suited to the brush of Frederick Remington. Movie companies from Hollywood often film their outdoor action in this area, and "Oil for the Lamps of China" and countless westerns have had their origin here.

Inyo County is crisscross with drooping high-tension wires, and its water supply is tapped by the mighty Los Angeles Aqueduct. But it is still so far removed from urbanity as to recall the remark of Darius Mills when he first rode over the antecedent Carson & Colorado Railroad in the '80's. Despite the industrialization implicit in the high-tension conduits and the modernities of Diesel trucks tearing at the quietude of midnight highways, and despite the Alpinists, armed cap-a-pie from rucksacks to cleated boots for the assault on Mount Whitney, Owens Valley is essentially pastoral in its every motive and suggestion, a gentle verdant land-




**At Owenyo, where the narrow gauge meets the standard tracks, lading is transshipped by hand↑. Trucks of the combine cars→ were built by Virginia & Truckee. Wartime camps for Japanese internment were near here.**

scape of trout streams, browsing cattle, and tall trees framing the historic pursuits of agriculture.

At Keeler, where the sun shines an average of 360 days a year, the shops are in the open air; and tools and spare parts racked and stored under the sky suffer no damage from the weather. The engines themselves never know a roof. During World War II, Keeler became very near being jolted out of its sleep when the Federal government drew up an emergency plan to run the Southern Pacific's main line from Hazen south through the Owens Valley to Los Angeles. It would have standard-gauged the Keeler branch and retracked the high pass between Nevada and California, and would have avoided

the whole crossing of the High Sierra between Reno and Sacramento. Had any danger ever actually threatened the SP's old Central Pacific line over the Donner Pass, this plan would have gone into prompt effect, but the Owens Valley was spared any such convulsion by the remote nature of the war against Japan.

Unlike most narrow gauge exchange points with standard gauge lines, Owenyo, 17 miles north of keeler, has no three-rail tracks. This is where transfer is made with the standard gauge line running southward to Mojave. The slim gauge cars are spotted opposite the conventional cars, separated by a platform, and their contents moved by conveyor belts or trucks as their nature may require. Station Agent W. F. Tommer is a Keeler branch veteran, having gone to his present post at Owenyo in 1924, when he says, "We really ran a bygod railroad. We had a mixed train daily each way between Keeler and Mina, and a daily scheduled freight

**Aberdeen, which once had an imposing depot, today has only a leaking water tower supplied by a windmill↖. Rails which run past the tank are the original ones laid in 19th century. Engine 18 starts out of Laws yards↓ on its run to Keeler.**

to Laws. Now I'm sort of old and the railroad is old and we mostly doze in the sun the way old things should."

Aberdeen, once a flourishing depot community near the Laws end of the run, has a water tank which is operated through the picturesque agency of a windmill, and the turntable at Laws yards is of the genus armstrong. Not a semaphore nor other signal is anywhere on the line, although at intervals are telephones, dubiously sheltered from the elements by wooden pole boxes, which connect with Owenyo and Keeler by a complicated system of signals on a hand-cranked magneto. Stub switches and derails are marked by ancient target switch stands all along the line, and reluctant cattle on the open ranges require prodigious and sometimes continuous whistle tooting on every run.

The three Ten-Wheelers which now comprise the motive power of the Southern Pacific narrow gauge, Nos. 8, 14, and 18, originally ran on the Nevada-California-Oregon between Reno, Nev., and Lakeview, Ore., and were taken over for use in the Owens Valley when the SP standard-gauged the NCO. For nine months of the year two engines are kept under steam, one for daily operation and one for stand-by. The third is shopped. In late October, November, and December, when considerable sheep are moved from the ranges at the northern end of the valley, all three engines are kept hot, as it requires triple-headed trains to move 20 loaded cars over the grades just south of Laws.

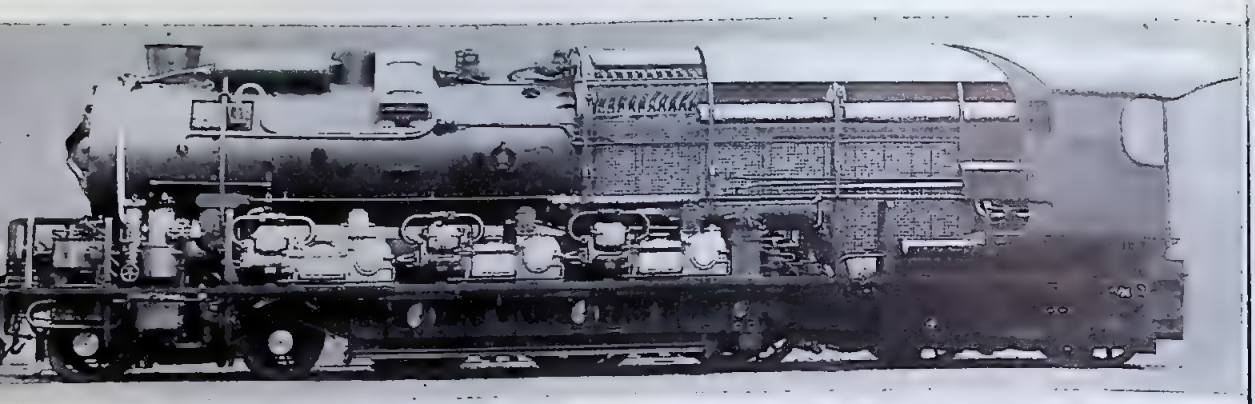
Only two or three former C&C combines are now on the rolling stock roster. Painted a sunburned red, they serve as way cars for freight crews. Their trucks are marked "V&T — Carson," souvenirs of the time when all the Carson & Colorado's equipment was out-shopped by the parent Virginia & Truckee. The diminutive combine marked "SP 1," which is the rolling and clattering home of Conductor J. A. Brennon and Brakemen Clyde Beckes and Carl Hanson, is neither substantial nor sturdy, but it fills its purpose and the men like it. Its walls are adorned with lithographs and color prints from popular periodicals, and its art includes a Sunday supplement picture of Ernie Pyle and another of President Roosevelt, an Audubon drawing of a ringneck pheasant, a classic Currier & Ives print of a New England winter scene, and a picture by Peter Helck of a 1905 automobile race meet.

An interesting feature of the operation today is that the single train crew operates out of the Salt Lake Division of the SP, most of the men making their permanent quarters at Sparks, Nev., while the mechanical force is derived from Bakersfield, Calif. The Salt Lake hookup stems from the time when the line connected at Mina with the standard gauge branch which was part of the Salt Lake Division.

The great days for the narrow gauge were during the boom in Tonopah and Goldfield at the turn of the century, when, for a splendid carnival period, its little yellow cars were Pintsch-lighted caravans making a golden journey. Their plush coach seats bulged with stock salesmen, top-hatted gamblers, prize fighters, Harvard geologists, and burlesque queens, all bound for the fabled crystal chandeliers of the Bonanza Club and Tex Rickard's immortal Northern Saloon. The baggage cars overflowed with crated roulette wheels and cases of imported wine, and the desert was generous with games and gold and girls. The Nevada & California, as it was then incorporated, made the most of it. Today the mountain lion and the lowly lizzard inhabit the fandango palaces of senescent Tonopah and ghostly Goldfield.

The Keeler branch, together with the Virginia & Truckee and the remaining trackage of the Tonopah & Goldfield Railroad, is the last remaining trace of the once heavily trafficked and still infinitely romantic and glamorous system of iron which linked the rich mining regions of Nevada and southern California with the outer world. They had their inception in bonanza times; their histories are crowded with high finance and mighty destinies, and their declining years find them securely fixed in the legend of the Old West. Nowhere else in the United States is there anything quite comparable to the railroad in Owens Valley, a sort of slim gauge Grand Duchy of Luxemburg amidst the great powers of the standard gauge. Gone are the guns and the gold that was its primal reason for being; gone the broad-hatted miners and the civilization of double eagles and silver dollars. It is something out of a pastoral landscape in a setting of meadowlands and tranquil stands of trees. The rolling smoke of its oil burners billows gently across irrigated countryside at sunset and its crossing whistles echo against mountain escarpments to indescribable loneliness.

But once the Carson & Colorado gloried in the bright metallic noontide of its railroading youth, and the legend of its great days will be there forever.



# Modern French Steam Locomotive

**Superheated high-pressure steam works on 18 pistons in six separate motors to drive this Swiss-made 4-6-4, now under test**

BY ALAIN MADLÉ

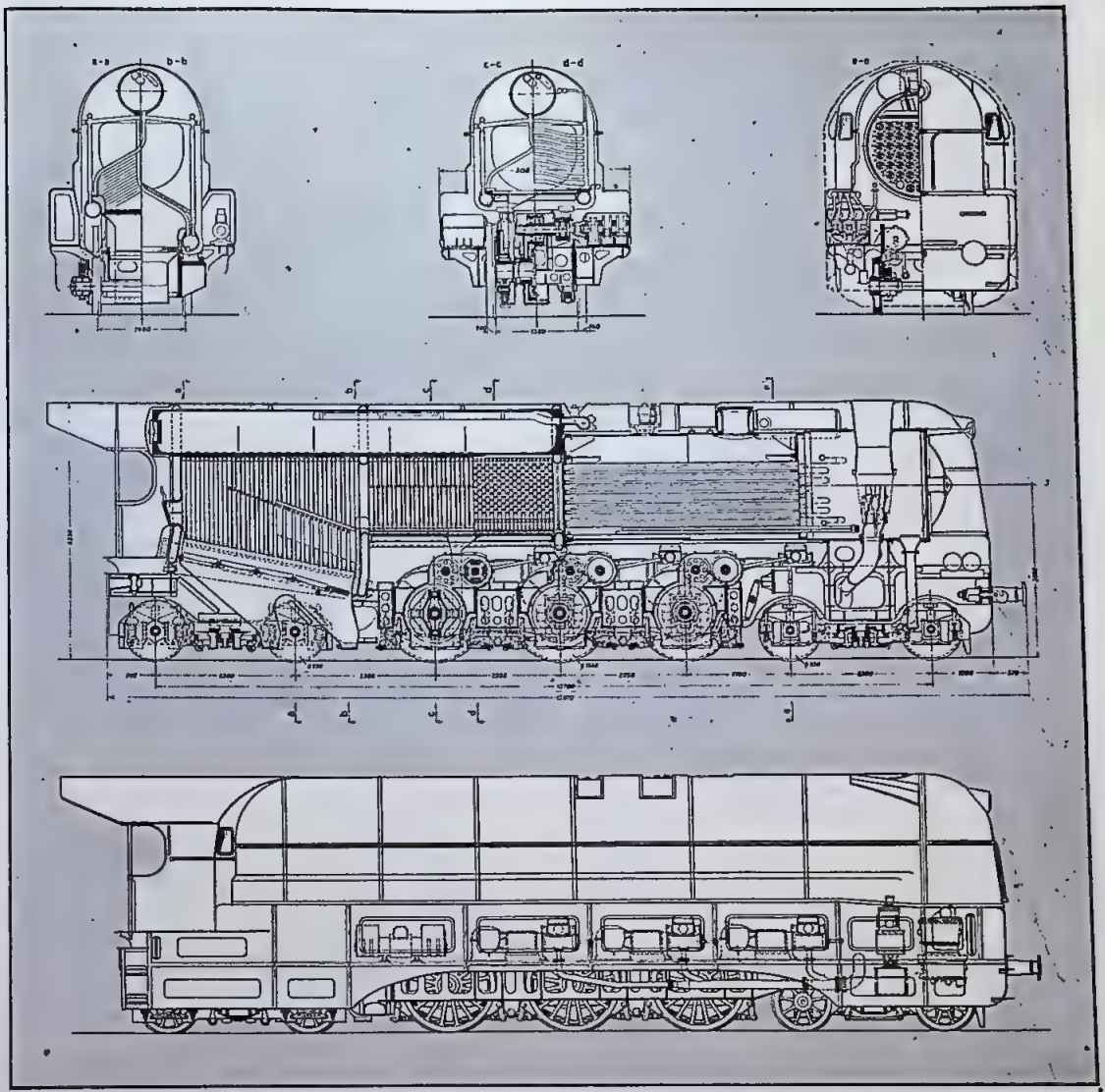
*Revolutionary* in design is a steam locomotive now under test in Switzerland. Of 4-6-4 wheel arrangement, the locomotive makes use of highly superheated steam to increase thermal efficiency, and reduces unbalance by breaking up reciprocating motion into 18 units. This latter is accomplished by means of six double-acting three-cylinder steam motors arranged in pairs to drive each axle.

Such an engine is, of course, much more complex and more expensive to maintain than the simple two-cylinder locomotive so widely used in the United States. But in France, where this locomotive will eventually be used, it will be (or is planned to be) cheaper to operate than the conventional locomotive. Coal is relatively expensive in France. On the other hand, labor is relatively cheap. Thus, while maintenance may be expected to cost somewhat more, the saving in fuel is expected to more than make up the difference.

To obtain the high steam temperatures which allow the locomotive to obtain more heat from the same amount of coal, the water and its resultant steam takes a long trip through a chain of heat exchangers consisting of three feed-water preheaters, a high-pressure boiler and a high-pressure superheater. Combustion gases from the firebox and boiler come into contact first with the superheater, then with the high-pressure preheater, and finally with the low-pressure preheater before they enter the smokebox. When the steam finally is piped to the steam motors which translate heat into motion, it has a temperature of 890 degrees Fahrenheit and is under pressure of 880 pounds per square inch.

The six horizontal steam motors are designed to operate at 950 revolutions per minute and transform the energy of the superheated steam in one step, utilizing a pressure head from 880 pounds per square inch down to normal exhaust pressure. Temperature of the steam drops to 220 degrees.

An idea of the fuel saving which can be expected from this locomotive can be gleaned from recent tests of an American locomotive made with the same train and under the same conditions but with different boiler pressures. Operating at 270 pounds boiler pressure and with a steam chest temperature of 665 degrees, this locomotive pulled a 1065-ton train at 39.15 miles an hour and consumed 15,145 pounds of coal per hour; water evaporated totaled 104,946 pounds per hour. Operating at 287 pounds pressure and with a steam chest temperature of 676 degrees, coal consumption was 14,828 pounds per hour, while water evaporation was 103,365 pounds per hour. The difference in the firing



## Principal Dimensions

**High-Pressure Boiler**

| | |
|---|---|
| Steam pressure, lbs. per sq. in. | 880 |
| Grate area, sq. ft. | 37.7 |
| Entire high-pressure heat-exposed area, sq. ft. | 474 |
| Superheater, heat-exposed area, sq. ft. | 452 |

**High-Pressure Preheater**

| | |
|---|---|
| Pressure, lbs. per sq. in. | 880 |
| Heating area, sq. ft. | 1075 |

**Low-Pressure Preheater**

| | |
|---|---|
| Pressure, lbs. per sq. in. | 220-395 |
| Heat-exposed water area, sq. ft. | 1240 |
| Steam dryer, sq. ft. | 48.5 |

**Uniflow Steam Motors**

| | |
|---|---|
| Number of cylinders (each of six motors) | 3 |
| Bore, in. | 5.9 |
| Stroke, in. | 10.03 |
| R. P. M. at 87.5 m. p. h. road speed | 950 |

**Drive Gear**

| | |
|---|---|
| Gear reduction | 1:1.975 |
| Diameter of drivers, in. | 61 |
| Diameter of truck wheels, in. | 37.5 |
| Rigid wheelbase, in. | 161 |
| Wheelbase of trucks, in. | 90.5 |
| Length of locomotive, ft. | 49.5 |
| Total length of locomotive and tender, ft. | 82 |

**Weights**

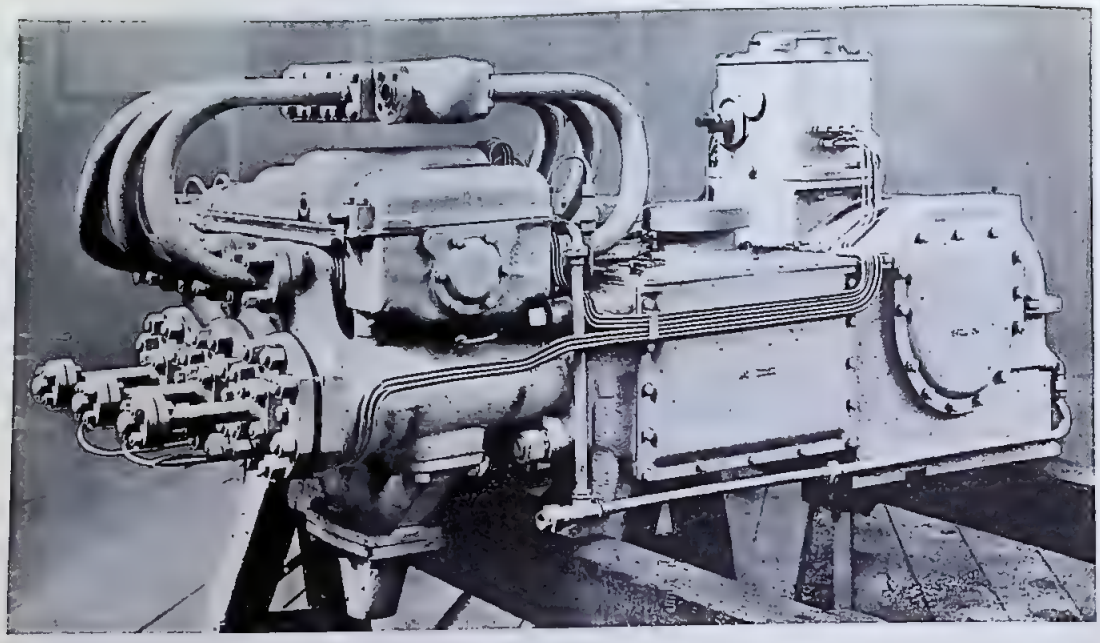
| | |
|---|---|
| Service weight, tons | 121 |
| Traction weight, tons | 69.5 |

**Speed**

| | |
|---|---|
| Maximum sustained speed, m. p. h. | 81 |
| Maximum speed, m. p. h. (short-timed) | 87.5 |
| Maximum speed, drawbar pull, lbs. | 14,200 |

**Tender Capacity**

| | |
|---|---|
| Water, gals. | 9200 |
| Coal, tons | 9.65 |



Extremely high-pressure steam produced in this boiler→ drives six double-acting three-cylinder steam motors↑ to produce 3300 horsepower. Schematic drawing↘ shows route of water from tender, through three preheaters, high-pressure boiler and superheater, to the motors.

rate was three pounds per square foot of grate area per hour.

The three-cylinder steam motors which drive the new locomotive operate on the uniflow principle with piston-controlled exhaust ports in the middle of the 5.9" x 10" cylinders. Intake is controlled by cam-operated poppet valves. The motors are compensated by counterweights for rotational unbalance only. Since the three cranks of each motor are offset by 120 degrees against each other and by 180 degrees against the corresponding cranks of the other motor working on the same axle, a satisfactory degree of balance is achieved. Pulsations are further smoothed out by a 2:1 gear reduction between the motors and axle.

The French Northern Railways placed the order for this locomotive before the war, with three prominent French industrial concerns which ultimately obtained the aid of the Schweiz Lokomotiv und Maschinenfabrik (Swiss Locomotive & Machine Factories). The S. L. M. built the locomotive at its Winterthur works. Tests were interrupted by the war and were only recently resumed.

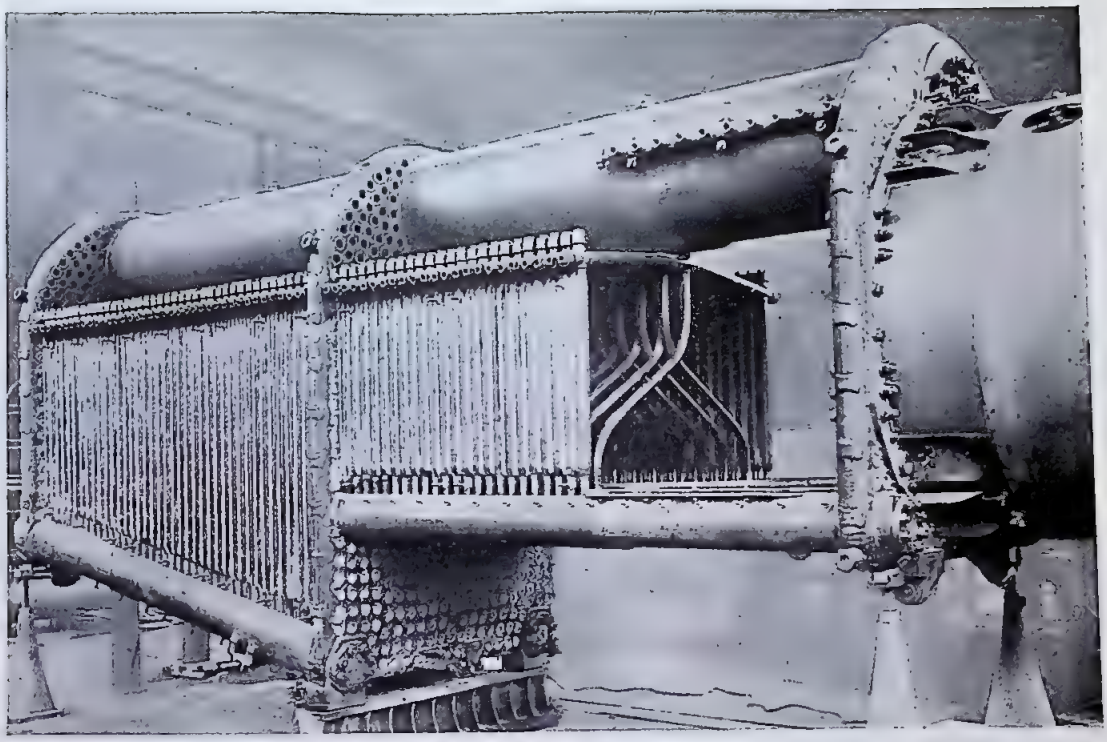
Specifications called for a 2-C-2 (4-6-4, by Whyte's classification) axle arrangement and individually driven axles. Grate dimensions were to conform with those of a standard French Northern "Super-Pacific" so as to maintain hand stoking. The locomotive was to develop 3300 horsepower at a sustained speed of 81 miles per hour with a possible peak speed of 87½ miles per hour. A streamlined cowling was also specified.

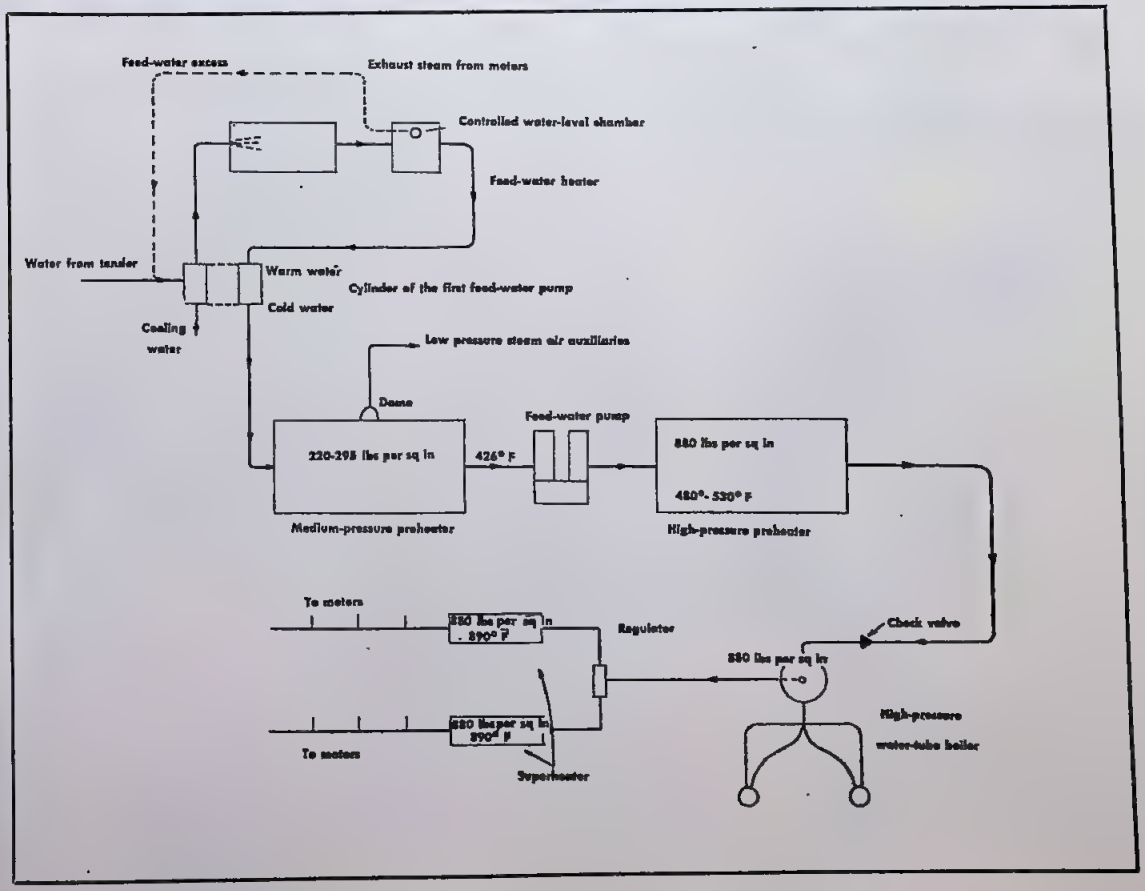
## Price Increase

Effective with the April issue of TRAINS the price will be changed to 35 cents per copy or $4 per year. Ever since the end of the war we have been scratching our heads trying to avoid the general trend to increased prices, and for more than a year we have operated TRAINS at a very substantial loss, hoping that conditions would return to normal. It is now evident that our costs, which are up 82 per cent on paper, 85 per cent on photoengravings, and 75 per cent on wages, will not come down. Our reserves are depleted, and whether we like it or not we must adjust our price or subtract substantially from the quality of the magazine. We have taken what seems to us the better course.

Before April 1, subscriptions and renewals will be accepted at the present rates, and our life subscription at $50 will continue effective.

*A. C. Kalmbach, Publisher.*




Feed-water excess
Exhaust steam from meters
Controlled water-level chamber
Feed-water heater
Water from tender
Warm water
Cylinder of the first feed-water pump
Cold water
Cooling water
Low pressure steam air auxiliaries
Drains
Feed-water pump
220-295 lbs per sq in
426° F
880 lbs per sq in
480°- 530° F
Medium-pressure preheater
High-pressure preheater
To meters
880 lbs per sq in
890° F
Regulator
Check valve
880 lbs per sq in
880 lbs per sq in
890° F
To meters
High-pressure
water-tube boiler
Superheater

# Oahu

ARMY United States Army
DEL Dekyn Electric Line (Electric, abandoned)
EPC Ewa Plantation Co
HPC Honolulu Plantation Co
HRT Honolulu Rapid Transit (Electric, abandoned)
KPC Kahuku Plantation Co
KRy Koolau Railway (Abandoned)
OSC Oahu Sugar Co
PINE Pineapple spur tracks (Formerly operated by OR&L)
USN United States Navy
WAC Waialua Agricultural Co
WP Waianae Plantation (2½ foot gauge)
WSC Waimanalo Sugar Co (Abandoned)

PACIFIC OCEAN

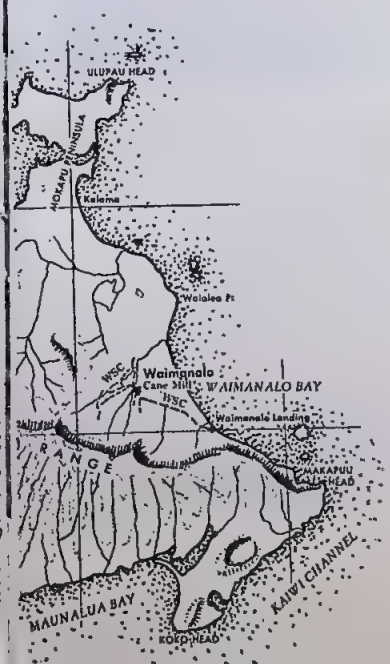
A military railroad was built during the war from Brodie Junction to Waialua Bay for emergency purposes. Its route is not shown on this map

KAHUKU POINT
Kawela
Waialee
Kahuku Ranch
Kahuku
Kahuku Point
KPC Cane Mill
Pupukea
Laie
Laniloa Pt
Waimea Bay
Waimea
Ashley
Kaiaka Pt
KAIEIWAHO CHANNEL
Waialua Bay
Kawailoa
Haleiwa
Waialua
Kamokoi Stream
Hauula
Punaluu
Kahana
Kaaawa
Kualoa Pt
Waikane
Quarry
Dillingham Ranch
Kawaiiki
Yokohama Rubbish Dump
Makua
Makua Valley
Kaena Pt
Keawaula
Mokuleia
WAIANAE MOUNTAINS
MT KAALA Elev 4025
Schofield Barracks
Wahiawa Elev 970
Galbraith
Helemano
North Fork
South Fork
Elev 2681
Kaneohe Bay
Libbyville
Coral Gardens
Kaneohe
Waianae
Cane Mill
Lane Spur
Sand Pit
Mail
Tesio
Nanakuli
Quarry
Kolekole Pass
Waipahu Junction
Waipahu
Kelauea
HPC Cane Mill
Aiea
PEARL HARBOR
Halawa
Navy Yard
Honolulu
Ewa
Ex EPC Cane Mill
Puuloa
Salt Lake
Fort Shafter
Nuuanu Valley
Elev 3105
Hickam Field
Kapalama
Punchbowl Hill
Fort Ramehameha
Keahi Pt
Ewa Beach
Barbers Point Naval Air Station
Barbers Pt
Aloha Tower
HONOLULU
Kaimuki
Waikiki
Kahala
DIAMOND HEAD
Tokyo 3850 miles
San Francisco 2410 miles
Panama 5240 miles
OAHU RY & LAND CO
Other lines
Scale 5 miles to 1 inch
Contour interval 500 feet
Map by Lee H. Wescott
Double-track from Honolulu to Aiea formerly reached Waipahu
Automatic block signals protect track from Honolulu to Dole Siding

# Railway & Land Company

**WITH PHOTOGRAPHS BY KENT W. COCHRANE**

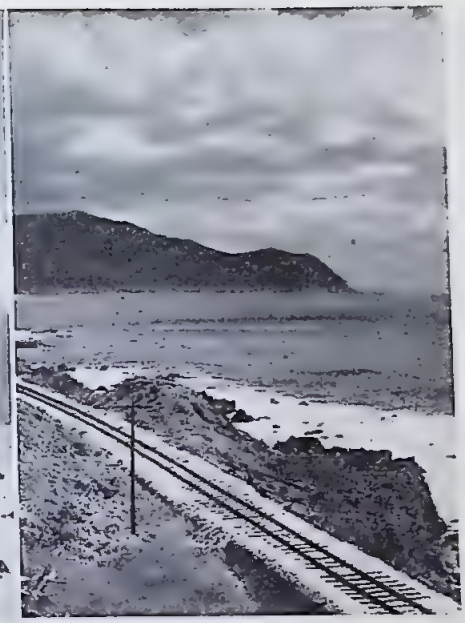
**A few months ago genial, soft-eyed Walter Francis Dillingham sat at a conference table with the directors of the large sugar companies of Hawaii's capital island, Oahu. As president of the Oahu Railway & Land Company, he explained the necessity of raising rail rates on freight carried between the OR&L docks at Honolulu and the various sugar plantations. Storm damage, the need for new locomotives, and the increasing competition of the highway for short-haul business were all pressing factors. Before that conference was over it became obvious that the OR&L would have to shift from rail operations and handle its transport business by truck. Thus, next January the activities of one of the most interesting railroads in the United States will end.**




Oahu, half as big as Rhode Island, consists of mountain ranges Koolau and Waianae and a saddle of high land between them. To avoid grades the OR&L engineers built the railroad along the coast, 70 miles from Honolulu to Kahuku. By air, over the jagged peaks of the Koolau Range, the distance is 26 miles; by highway, 35. The main line never rises higher than 70 feet and is usually about 10 feet above sea level. Besides the sugar plantations, OR&L also served the Kahuku sand pit↑ until a tidal wave last April washed out both pit and portions of the railroad. Few passengers travel beyond Haleiwa↖, where a hotel and a park furnish an attractive terminus for round-trip excursion trains from Honolulu: $1.90 for the 110-mile all-day outing. The road's sharpest curve↗, 19 degrees, rounds Kaena Point 44 miles from Honolulu, unveiling the most beautiful seascape on Oahu Island.

The Kahuku freight makes extra smoke at Arch Rock while Coast Guardsman Kent Cochrane pictures it with Kaena Point in the background. The OR&L was extended from Waianae to Kahuku just after Hawaii became part of the United States in 1898. Previously missionaries, commercialists, natives, and kings fought over lands.

Important extra wartime revenue resulted from the Army's need for land at Honolulu's Kapalama rubbish dump. Special cars were built and for $20 a load OR&L hauled refuse to forlorn Keawaula near Arch Rock. Witty Yanks nicknamed the dump "Yokohama." Special bulldozers pushed the rubbish off the cars↑ and once a week the pay train← brought workers' wages, a custom now rare on the mainland. When Dillingham proposed his railroad, only one sugar plantation was of any consequence. Now Oahu has seven large plantations along the coast. Small farms are generally unsuccessful, as sugarcane and pineapple require special care.



After Queen Liliuokalani lost her throne, a republic was formed with Sanford B. Dole as president. Dole became first governor under United States rule, and was known as the "grand old man of Hawaii" until his death in 1926. The defeated queen wrote the song "Aloha Oe," which has touching meaning: "Farewell to Thee." Near these 2000-foot cliffs↑↗ at Arch Rock is Dillingham ranch. Benjamin Franklin Dillingham, first mate of a merchant ship, was obliged to stay ashore at Honolulu when he broke his leg in 1865.

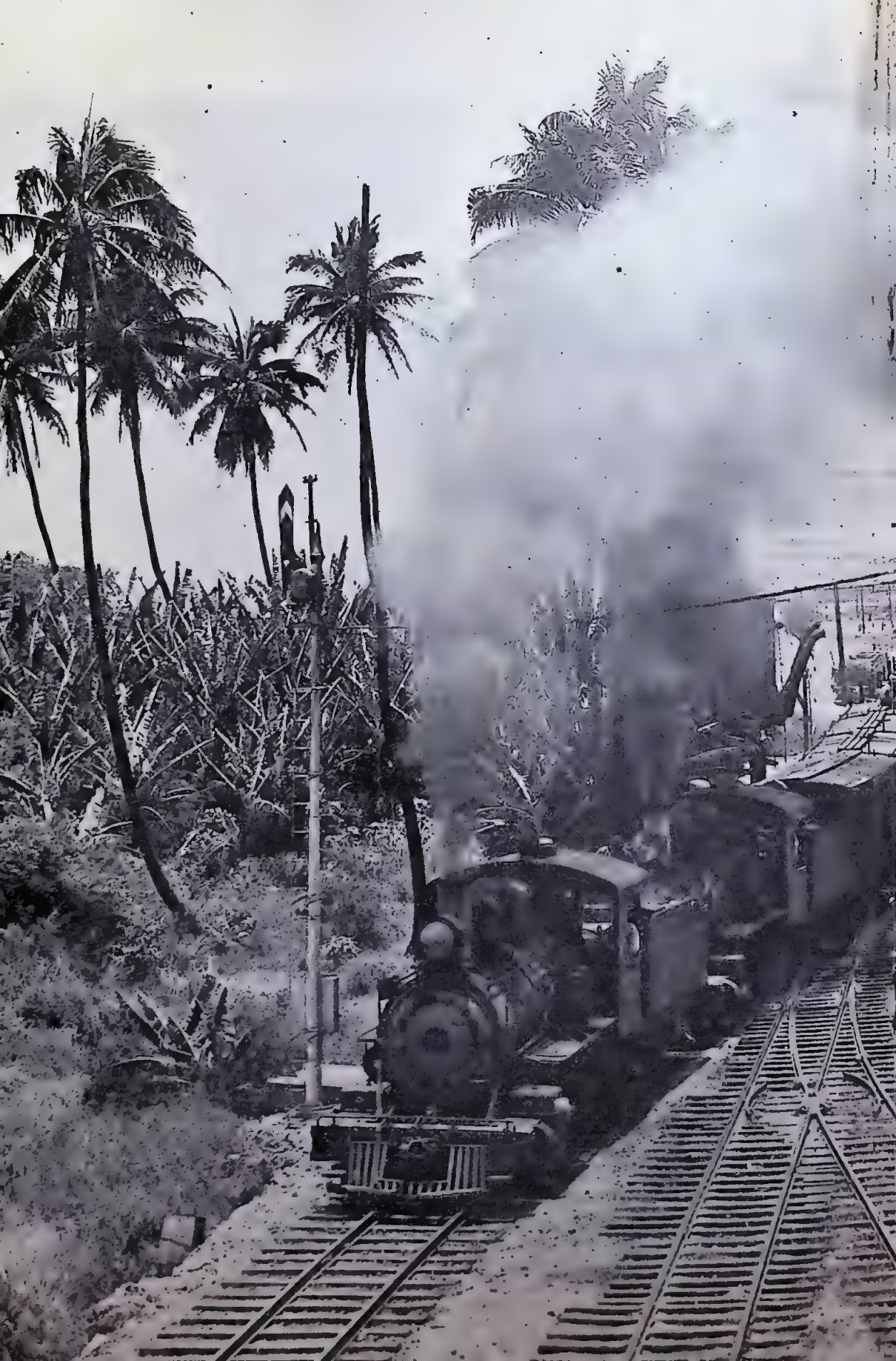
Waiting for his ship to return, Dillingham grew to love the island. He envisioned a railroad encircling its shores to tap undeveloped lands. He founded the OR&L in 1866; people called it "Dillingham's Folly," but he boasted on his 44th birthday in 1888 that by his next they could all have a ride. Few realized that sugar, pineapples, and the tourist trade were to insure Oahu's future.

Dillingham won his boast and by 1889 his railroad reached Halawa, near Aiea. For a number of years Waianae Plantation, 32 miles from Honolulu, was its terminus↖. L. c. l. freight↑ is unloaded from a 10-ton box car. Near by a semaphore↗ on the main line indicates when loads are ready at the lime spur→. Like all sugar plantations, Waianae has its own private railroad system extending through the cane fields. The Waianae system is 2½ foot gauge; the OR&L and all the others are three foot gauge. The Waimanalo lines at the east end of Oahu were abandoned in 1941 and their business is now handled by OR&L trucks. Honolulu Plantation Company has also abandoned its cane field lines. Ewa, Oahu, Waialua, Waianae, and Kahuku will abandon when OR&L goes to trucks. The only other railways on the island were the Honolulu Rapid Transit and the short-lived Desky line, both narrow gauge street railways, and the Koolau Railway, which extended along the East Coast from Kahuku. It planned to pierce the mountains by tunnel.

During a meet at Nanakuli the engineer of the waiting train purchases a box of poi, a fermented paste made from the taro root, similar to the sweet potato. It is one of the most nutritious of all vegetable foods. The engineman of the arriving train↖ kids h'm for going native. Between knife-edged hills and mountains are oval valleys along the Waianae coast←. Cactus clings to the rocks but the level areas have made fine sugar lands. Train crews keep cool atop the cars along the beach. At Kahe Point the track swings across the widest plain on the island toward Pearl Harbor. On this coral plain and the slopes above is Ewa Plantation. Toward the sea is Barbers Point Naval Air Station. The conductor marks his register← as the train spots a tank car from Lualualei Ammunition Depot (near Nanakuli) to the airfield. We take siding↙ for another meet at Ewa. The star on the front of engine 98 is a reminder of the annexation of Hawaii to the United States in 1898. Another starred engine, No. 76, honors the reciprocity treaty which was signed in 1876. The railroad continues to Waipahu↑, where the Oahu Sugar Company mill is located. A typical freight train↓ approaches Waipahu.

Fifteen car excursion trains like this one passing West Loch↑ were resumed at the war's end. Wiapahu Junction, shown on page 32, is the focal point of much railroad activity on the OR&L. The train of pineapple crates is coming off the Wahiawa branch from Dole Siding. Branch trains take on water↗ and climb the 2.5 per cent grades. Near the top they round an S curve→ and lift their loads from irrigated cane plantations to the self-sustaining pineapple fields. B. F. Dillingham sent his son W. F. Dillingham, the present railroad president, to Harvard. One of W. F.'s classmates was James Drummond Dole of Boston. Dole was first cousin once removed of Governor Sanford B. Dole, so it wasn't surprising to find young Dole homesteading on Oahu after graduation. He turned his education to perfecting the means of growing, preparing, and marketing the pineapple, and his 12-acre ranch soon grew to immense proportions. At first an unknown and skeptically considered fruit, the years of advertising effort made their mark and thousands of carloads of pineapples began rolling down OR&L's Wahiawa branch. From Dole Siding the branch reaches to the famous Schofield Barracks, a large Army camp.

Top photograph by Ralph E. Hallock, Plainfield, N. J.; others, Kent Cochrane.



See page 31.

Looking back across the lower half of the S curve← we see the miles of pineapple fields leading up to the Waianae mountains. After passing through the last deep cuts↑ trains reach the open lands at the top of the saddle. Here the elevation is from 700 to 1000 feet, just right for pineapples. Northeast of the pineapple fields is the Koolau Range, which can be seen in the background of the rubbish train picture on page 31. At the crest, as high as 3000 feet above the eastern coast lands, the land drops off in a sheer cliff. For the full length of the island, the only pass through these mountains is directly opposite Honolulu. The small area and relative inaccessibility of the East Coast has kept it from being developed as thoroughly as other parts of Oahu. Because of this, B. F. Dillingham's dream of continuing the railroad around the island was never realized.

Near Vans Siding, end of part of the branch, this ammunition train is ready for the down trip. Notice barbed wire.

The rocky, cactus-covered walls of Waikakalua Stream echo the screech of brakes as the train slowly nears Waipahu.

Engineer Tarvers↑ applies the air hard to bring the train to a stop at the crossing near Waipahu. The train on the other track is an Oahu Sugar Company cane train heading for the fields. The brakeman, sitting on sand bags which help keep the drivers on the rough tracks, grins at the OR&L crew because OSC has the right of way over the crossing↗ at all times. Engine 32 and sisters 34, 35, and 36 are second heaviest on OR&L, 101,000 pounds with tender.

Back on the main line and beyond Waipahu we enter Waipo Cut↙, a section of track recently relocated to remove a bad curve and to eliminate a highway intersection. The cut was graded for two tracks but only one was laid. This is a train from Nanakuli Navy Rest Camp. Nearing Honolulu, an engine picks up sand at a pit↓ near Fort Shafter. Curves on the main line have been improved; double track is used from Aiea to Honolulu.

At the Honolulu station Diesel engine 15↑ waits with a special train for Pearl Harbor Navy Yard. An acute shortage of passenger cars made it necessary to use motor cars M-1 and M-2 as coaches. Here they are just behind the engine. M-2 is shown more clearly below↙ at left. Even before war, naval and military installations on Oahu were extensive. This special← is headed for Barbers Point along the double drive near Puuloa.

Pearl Harbor workers' trains↙ often pulled out of Honolulu with the engine running backward. The last of the OR&L Baldwins were delivered in 1902; after that, all locomotives except two were purchased from American. This Alco Consolidation↓ came in 1909; other engines were ordered as late as 1926, and in 1943 two Alco Diesel switchers were added. OR&L also purchased a Baldwin from the Pacific Coast Railway in 1942; numbered 111. it has inside frames, unlike most Oahu locomotives. The Oahu Railway was always neat and well cared for; the tidy roundhouse is typical of the Dillingham pride in the property. The Dillinghams were — and are — genuinely interested in railroads and it is with considerable reluctance that they turn their transportation industry over to highway operation. They have managed their company well, and have carefully planned so all employees will get jobs in the trucking firm.

No. 85↑, a Ten-Wheeler suited mainly to passenger service, is pulling a Barbers Point train from Honolulu. In the background is the formidable Koolau Range which overlooks the city of Honolulu, where the OR&L will continue to operate its extensive harbor facilities. At no cost to the city or to the United States Government, the railway company dredged and improved a large portion of the fine Honolulu Harbor. Heaviest engines of OR&L are 60, 70, 80↓, and 90, purchased in 1925 and 1926. Weight, 156,030 pounds with tender. These Mikados handled most long runs to Kahuku and often to Waianae. They are the only engines of moderately recent design on the road equipped with trailing trucks. Note the outside frames.

# Spuyten Duyvil: Third Trick

**Historic interlocking tower on NYC's Electric Division routes passengers to Grand Central Terminal, freight to west side yards**

ARTICLE AND PHOTOS BY HERMAN RINKE*
Third Trick Towerman

*Come with me* while I work the third trick at SS-DV, important operating point 10½ miles north of Grand Central Terminal on the Electric Division of the New York Central System. This is where city-bound freight and passenger trains part company, the freights continuing south along the east shore of the Hudson River while passenger trains turn southeast to skirt the east bank of the Harlem River to Mott Haven (MO) at 149th Street, there to join the Park Avenue line of the old New York & Harlem Railroad for the last short lap to Midtown.

I'm due on the job at dead midnight, but we will get there a few minutes ahead of time and you can look the layout over while the second trick man explains to me what freight cars are at hand, what trains are overdue, and any other uncompleted work. But first let me tell you a little about DV, so you can better understand what goes on here.

DV is at Spuyten Duyvil, at the confluence of the Hudson and Harlem rivers at approximately 225th Street in the Bronx, New York City. Its name (from *"te spijt den duivil,"* meaning "to spite the devil") is indicative of the difficulties of early Dutch mariners negotiating the junction's heavy tidal currents. Today Spuyten Duyvil is a three-way rail intersection.

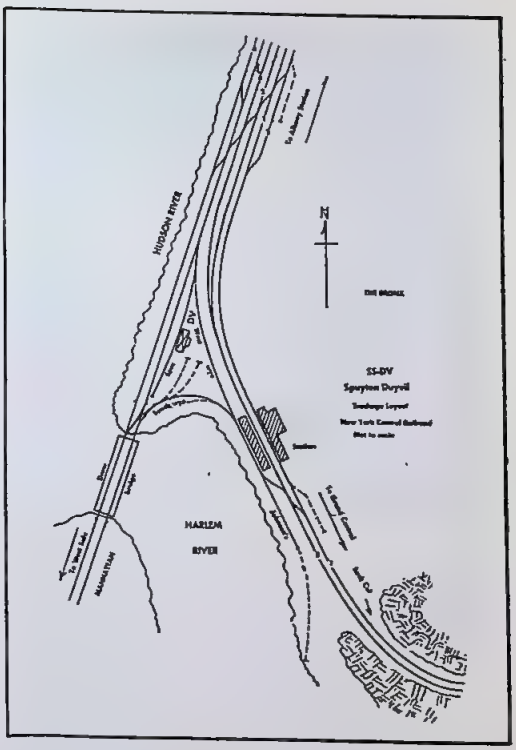
DV Tower is a historic spot in American signaling. In 1874, when there were already 13,000 interlocked levers on one road in England, DV was the location for the first interlocking in America, then of the mechanical type. Today

*Fourth prize winner in the recent TRAINS photo story contest.

DV contains a General Railway Signal all-electric machine.

To the north is the six-track main line. The two tracks nearest the river are the freight line which continues south behind the tower, crossing the Harlem River over a drawbridge and going on to Manhattan's west side. The four passenger tracks merge to two as the railroad turns southeast over the old Spuyten Duyvil & Port Morris line which was constructed in 1871 to join the New York Central & Hudson River Railroad with the New York & Harlem Railroad. This reduction to two tracks is necessary because of a narrow curved rock cut just east of the station. The four-track line reappears east of the cut. The station is on the two-track portion, which helps to make this six-tenths of a mile of line a real bottleneck. Steps taken to alleviate this include closer-than-normal signal spacing, stopping only a minimum number of trains at the station, and two-way signaling which allows trains to run through the cut against traffic without train orders.

Out of the south tower windows we can see the drawbridge on the west side line. This is




From the Spuyten Duyvil station footbridge over the tracks one can see, in right foreground↓, the two mainline tracks from Grand Central Terminal, behind which is the west wye and, receding into background, the south wye. Trains to New York's west side cross drawbridge over the Harlem River. Diagram↑ locates DV Tower, crossovers, and station.

the only low-level draw on the river and must be opened for the smallest pleasure craft besides the river's normal complement of tugs, barges, and sight-seeing vessels. It cannot be opened unless the electrical unlock is secured from DV's machine, and then only after all signals on approaching tracks are at stop, all derails set.

Due to the extensive layout, every route through the plant is governed by at least two home signals which must be cleared (by pulling levers), in addition to whatever switches must be operated to establish the desired route. For westbound passenger trains the work consists mainly of dividing them from the single westward track to either Track 1 or Track 3. Track 1 is used mainly by through passenger and freight trains, while Track 3 must be used by all local trains. Trains from the west side may continue straight up Track 5 to the city line at SS-MV (Mount St. Vincent), where the six-track section ends and where they must be crossed to Track 1 or 3, or they may be sent over DV's ladder to 1 or 3.

Eastbound, the passenger trains on Track 4 must be dovetailed between those on Track 2 until they are again divided beyond the cut. West side trains run either straight 6 all the way or must be crossed over from 2 or 4 to 6. Freights on 6 for the SD&PM line are routed through the west wye. Most of the night work concerns freight.

**DV tower has 80 pistol-grip levers↑ in use at present, with provision for 108. Above the machine is a track diagram whose colored lights indicate the progress of trains over routes set up by the levers. Westbound train↓ from Grand Central turns northward past Spuyten Duyvil Hill, whose apartment dwellers see park-like shrubbery and lawn in triangular area bound by wye tracks. City-bound commuter train→ slows for stop at station. Tracks at left of tower are freight line.**

With one exception all regular eastbound freights go to the west side yards. However, most of them have some cars for Bronx industries and other lines connecting in the Bronx which are left at DV. From here they are handled by local switchers which make several visits during the night. Since Johnson's Siding (named after a former industry), just beyond the station, has a capacity of only 14 cars, all larger drops of cars are put on Track 5.

Switchers and freights between the west side line and Bronx points are routed via the south wye and the crossovers east of the station. The engineer of a 40-car train about to enter the cut can see his caboose on the bridge.

*Now* it's a few minutes before midnight; the second trick man has left and you'll have to excuse me for ignoring you occasionally while I do my work. Our attention the first 40 minutes is taken up with a parade of late evening westbound passenger trains. Shortly before we arrived, LS-1, a western freight hotshot, came out of the west side and went up Track 1. Hence No. 61, the *Montreal Limited,* was ordered up Track 3 by the dispatcher, and it passed DV at 11:42 p. m. Now the ringing of the approach bell from the west side indicates that No. 7159 is rolling under the approach to the George Washington bridge over the Hudson at 178th Street. Not all west side trains are freights, since the bulk of NYC's mail and express is likewise handled at west side terminals. No. 7159 (the 7 indicating west side connection) is bringing up mail cars, 14 in all, for No. 159 and several other trains plus an ordinary caboose for the train crew. These cars will be added to their respective regular trains from Grand Central Terminal while power is being changed from electric to steam or Diesel at Harmon.

I step on the telephone foot pedal which connects DV's mouthpiece with the dispatcher's line and, using the tower's nickname, I inquire, "Spike, the mail?"

"Three!" is the unhesitating command of Dispatcher Charlie Konz.

Immediately levers 81, 83, 85 and 87 are yanked out; eight pairs of switch points move instantly, permitting me to pull two more levers to clear the signals just as 7159's headlight peeks around the curve below the drawbridge. While it's passing the tower, I wink the floodlight at the engineer, count the cars and wink again at the rear-end crew. A moment later a series of red lights shows that 7159 is snaking its way across four crossovers from Track 5 to Track 3 with Harmon its next stop. I sit down and report to the dispatcher, "Spike west — No. 7159, motor three-two-one and heater seven, fourteen and one, on three, at 11:46 — Spike."

No. 59, the *Iroquois,* with cars for Chicago and the West Coast, follows 7159 on 3 at 11:54½.

**Commuter train No. 274 pulls into Spuyten Duyvil station↑ at 8:08 a. m. Only about 130 commuters use the Central from here, as the station is at the foot of a steep hill and the Interborough Rapid Transit has a station ¾ mile east. The advance Knickerbocker Limited emerges from the rock cut↗ bound for Buffalo. This mountainous scene is within the limits of New York City. Southward across the Harlem River goes a string of freight cars↓ which have just come off the south wye. Tall structure at right in this photograph is the Hendrick Hudson highway bridge connecting the Bronx with Manhattan Island.**

Next comes 259, a Peekskill local, at 12:03 a. m., after making the station stop. Thereafter Track 3 is sewed up for a while and three mainline trains following in rapid succession are sent up Track 1, LS-1 by now having reached a safe distance up the line. Close on the heels of the third one comes a traveling switcher from the Port Morris branch with work to do at Yonkers and Harmon. Ordered up Track 3 out of the

way, he groans by with 40 cars at 12:25. Then the last sleeper of the night sparks up 1 at 12:30½. Hardly has he gone when the west side approach bell "hits" again. What might be the most interesting train of the night, No. 139, is "on the bell." This is a solid express train of 18 cars for West Coast and intermediate points via various roads west of Chicago. Its consist might be from any or all of them — Santa Fe, Union Pacific, Southern Pacific, Missouri Pacific, Northern Pacific, Great Northern, yellow Milwaukees, Missouri-Kansas-Texas, Rock Island, etc. He rolls across the ladder to Track 3 at 12:35 with motor 340, the engineer shouting his usual greeting through the cab window.

Eastbound has been inactive, but now No. 56, a coach job from Buffalo, rings in on Track 2 as it passes MV, and three minutes later, at 12:58½, its markers are passing the station. Subsequent operation is similar for several hours.

Later on in the morning, while we discuss the exciting close of the baseball season with the night maintainer, three drawn-out wails on the river announce that a tugboat demands the bridge open. Five levers need be moved to set as many derails, two more to unlock the bridge. Then two red lights on the chart show that the bridge tenders are at work and the opening is under way. Eight minutes later it is closed.

Meanwhile, HN-2, a New York-bound freight with New England connections from Troy, has arrived on Track 6 at 6:12 a. m. with five cars to leave on Johnson's Siding. After waiting for the bridge circuits to be restored by the tenders, HN-2's cut is sent onto the bridge, then backed around the south wye to the siding, the flanges screaming their protest at the sharp curvature. The Class R engine retraces the route to its train beyond the north crossovers, while the head-end brakeman brings the waybills upstairs to cover the cars set out. At 6:28 his caboose rolls past the tower, over the draw and into the morning mist just as No. 202, the first commuter train, swings east past the station to herald the start of the morning rush.

The last hour brings a parade of inbound passenger trains, ranging from Yonkers locals to Chicago limiteds, some getting in the way of others through the bottleneck. At 7:55 the first trick man bobs up the stairs.

During the past eight hours we have witnessed and recorded on DV's sheet 20 freight movements totaling 693 cars, and 47 mail, express, and passenger trains with 389 cars. As we leave, those entries are all that remain of yesterday's third trick at Spuyten Duyvil.

In about an hour the *Century* will amble down the tracks, perhaps passing the *Commodore* at a slow pace, and slip through our switches. These trains have nearly an hour for the last 33 miles from Harmon to Grand Central and both are due at 9:30. If they need a few minutes they can often pick them up on the river tracks, thus insuring their fine record for on-time arrival.

# Huntingdon & Broad Top Mountain

**Bridge line between Pennsylvania Railroad connections at either end ekes out a precarious existence from the coalfields of southern Pennsylvania**

*It's a far cry* from the vastness of Pennsylvania Station, New York, and the quiet sleeping car luxury of the *Golden Arrow,* to the small shanty-like stations and the one and only coach of the Huntingdon & Broad Top Mountain Railroad in the heart of the southern Pennsylvania coalfields. Both sides of this contrasting railroad picture can be seen, however, on a trip starting from New York City. One can leave Pennsylvania Station at 11:45 p.m. and pull into bustling Altoona, Pa., at 5:40 the next morning. Returning 33 miles eastward from Altoona on No. 42, the *Rainbow,* arrival is made at Huntingdon at 7:06 a.m. This backtracking is necessary to make connections, since no westbound through trains stop at Huntingdon (297 miles from New York on the PRR's main line to the west) before 9 a.m., which is the departure time of Broad Top's No. 2.

The Pennsylvania's eastbound platform and waiting room at Huntingdon serve as the northern terminal of the H&BT, while a small shanty passes as yard office and general operations headquarters. The only Broad Top equipment visible as the *Rainbow* pulls in is a bright blue (former Napa Valley interurban) mail, baggage, and express car that is being stuffed to the roof with crates of baby chicks, auto fenders, and cardboard cartons of all sizes and shapes from mail order houses in New York, Philadelphia, and Baltimore, consigned to the stores, small businesses and hardy mountain folk throughout the Broad Top's wild and sparsely settled region.

At 8:25 the "Pride of the Broad Top," a 1907 Baldwin-built 4-4-0 known as No. 30, clanks over the Juniata River bridge and into the station, pulling a roller bearing combine coach numbered 27 and matching the brilliant blue of the mail-baggage-express car. She has just arrived from Saxton, 24 miles south, where the railroad maintains shops and a roundhouse. No. 30 has a deceptively husky-sounding exhaust that showers cinders with each sharp, throaty bark as she couples the combine to the loaded head-end car standing at the station, adds an empty Supplee milk car, and then backs across the bridge to the old wooden turntable at Smithfield, just over the river. A few seconds later a giant Pennsylvania M-1 (4-8-2) freight engine, with a radio-equipped caboose coupled to her ponderous tender, backs off the PRR main line and follows the little Eight-Wheeler over the river to the small freight yards maintained by the H&BT at Smithfield.

We half expect to hear the shattering of timber and a loud splash as the M-1 reaches the Broad Top's bridge, but a yardman proudly assures us that the bridge will take "anything the Pennsy's got." The title "yardman" is hardly sufficiently all-embracing to be accurate. To be more correct, he is coach cleaner, car inspector, passenger equipment mechanic, and general yardmaster. And it doesn't take long to discover that he knows his business.

The Broad Top's "grand old girl" soon reappears, having done an about-face on the hand-operated turntable, and after coupling up and testing the brakes we are ready to go.

With four other passengers aboard, we get under way about five minutes late and clatter across the bridge and past the general offices of the road, which are housed in a large two-story frame building painted (as are all H&BT buildings) a canary yellow that time and the elements have tempered to a rather muddish shade.

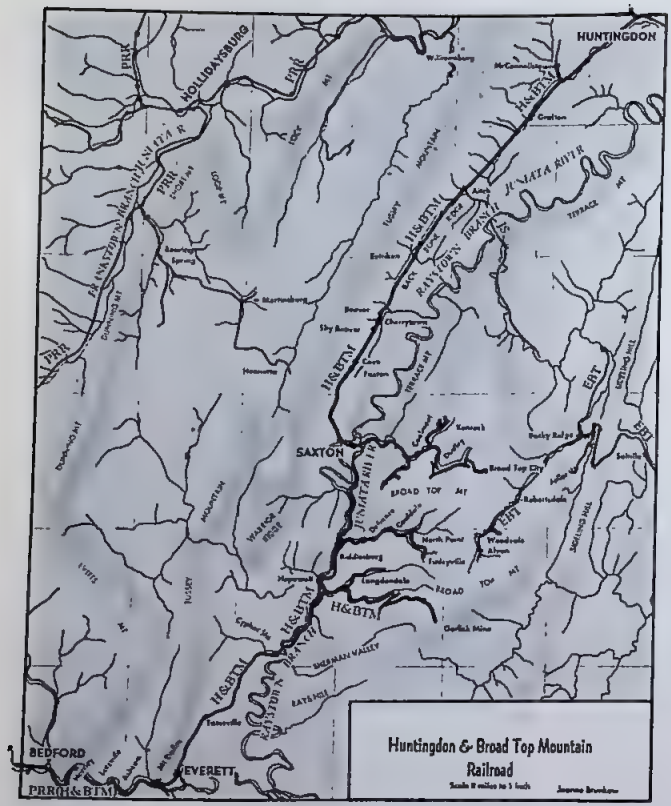
The brakes soon go on, and we stop at a small shanty at the end of the freight yards while the conductor goes inside to sign the "register," which informs other crews that his train has passed. This procedure is repeated at several of the branch spurs that leave the Broad Top's single-track main. We start off again and pass the big M-1, which has coupled onto a

BY A. M. RUNG JR.
PHOTOS BY THE AUTHOR

dozen gondolas loaded with Broad Top Mountain coal. She looks quite out of place in the woodsy setting of the Broad Top's freight yards. After picking up all the loads brought into the yards during the night by the light 2-8-0 freight engines of the H&BT, the M-1 pulls the cars over the river and onto the Pennsylvania main line, and as the merchandiser M-16 she swiftly clips off the scenic 90-odd miles eastward through Juniata Valley mountain passes to the giant PRR freight yards at Enola, Pa.

Coal is the lifeblood of the Broad Top; in fact, it carries little else. Of its total of 93 cars, 80 are used to transport coal. The pockets of Broad Top Mountain deep in the wilderness back of Saxton and Hopewell disgorge roughly 63,300 tons a month, and these go rolling over the H&BT's slender 70- and 100-pound rails to the Pennsy outlet for shipment to heavy industry throughout the East. It was King Coal that re-

**The well-vegetated right of way↑ of the Huntingdon & Broad Top Mountain Railroad runs 52 miles from Huntingdon to Bedford, with PRR connections at both ends. At Saxton↓, the road's headquarters, Train 2 pauses to unload baggage, express, and mail into waiting trucks.**




duced the Broad Top's net loss of $238,962 in 1944 to $76,238 in 1945, the best showing made in recent years. During the paralyzing coal strikes last year the road practically shut down. What effect this will have on 1946 revenues remains to be seen.

As we pull up the steady grade at Woodcock Valley toward Saxton we get acquainted with genial "Monk" Greenleaf, the line's only regular passenger conductor. "Monk's" career with the Broad Top began as a youngster in the freight offices, but his longing for the high iron was too strong and he became a fireman, graduating two years later into passenger service, where he has stayed. In "Monk's" early days his father was superintendent of the line, a man to be looked up to and respected, for the Broad Top was then a bustling freight carrier. Its

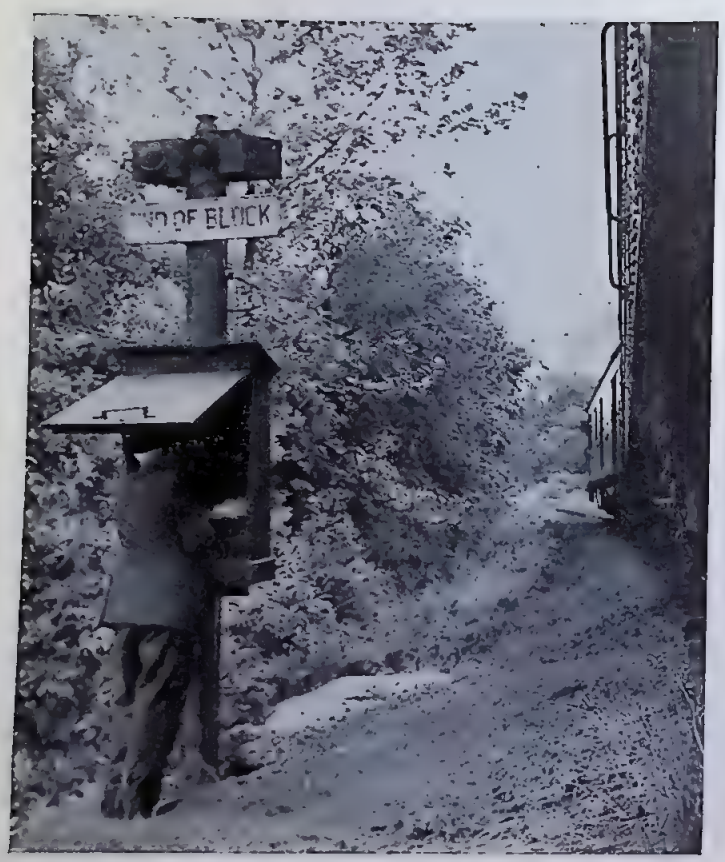
**Saxton is at almost dead center ↖ of the Huntingdon & Broad Top. Here No. 30 leaves every morning for the 24-mile trip to Huntingdon as No. 1, returns to Saxton as No. 2↓ at 9:55, proceeds to Bedford, runs back to Huntingdon as No. 3, then returns to Saxton as No. 4.**

Among weed-grown mountain scenery Train 3, northbound to Huntingdon, takes the siding↑ to allow a 10-car freight to make the hill. Freight engine is a 2-8-0.

frequent passenger service boasted a daily through parlor car from Philadelphia to Bedford, and the company shops at Saxton hummed with activity. Iron foundries dotted its line; the mines filled many a drag that rolled eastward to Huntingdon. Through freight from industrial West Virginia and Maryland came onto the Pennsylvania Railroad at Cumberland, Md., and was taken in tow by the Broad Top at Bedford for the bridge run to the Pennsylvania line at Huntingdon, forming a much-used through route to the eastern metropolitan areas. Yes, the Broad Top was a formidable little giant in the late 1880's and early 1900's, and although the bigger roads cast many a covetous eye in her direction, she declined to sell out, and perhaps for this reason began her own decline. The Baltimore & Ohio, Western Maryland, and Reading formed a through route to the East via Harrisburg which knocked the bottom from the Broad Top's through business, while truck, bus, and auto competition gradually sapped the road of more of its strength. The general lull following the 1929 crash was almost a final blow.

Back in the lush pre-automobile days the road carried many dignitaries to famous Bedford Springs, swank resort hotel and watering place two miles south of Bedford. "Monk" fondly recalls that many a railroad brass hat rode to the Springs in his business car on the rear of a proud flyer. In those days no tariff charges were required by the I. C. C. for such little courtesies, and the scenic region and exclusive Springs resort attracted many rail executives as well as the country's "first families."

We roll through a wild, sparsely populated countryside, stopping at small stations whose only proof of near-by habitation is perhaps one or two small frame houses and occasionally a combination general store and post office. A little girl hands a starved-looking mail sack to the railway post-office clerk and we pull out, climbing steadily to the next little stop. We skirt the picturesque Raystown branch of the Juniata River, and summer cottages come into view between breaks in the curtain of trees




Station at Hopewell→ also houses Bedford County library. Mount Dallas is a phone stop← where Conductor Greenleaf gets clearance over PRR tracks.

and bushes that gently brush the sides of the train. The cottages remind Conductor Greenleaf of "the old 24 car," an elegantly furnished H&BT business car that boasted a beautiful display of mahogany woodwork. No. 24 carried many of the road's officials far and wide, and finally, after many years, came to rest on a siding near the road's offices at Smithfield. A Huntingdon electrical dealer took a fancy to her and had her towed up the line and moved into place near the river branch.

"It sure made a wonderful summer cottage," sighs "Monk," who obviously would prefer seeing her gliding gracefully over the road's slender iron once more.

Somewhere between Hummel and Cove, "Monk" points out the window to a small cut in the side of a hill. "Here's where my brother was killed in a head-on collision a few years ago," he says. The head-on crash between an eastbound freight and a westbound deadhead passenger train exerted a crippling influence on the Broad Top's passenger activities. Prior to the accident (May 5, 1942), passenger service was maintained with a gas-electric car and express trailer, both painted Pullman green.

The freight is alleged to have overlooked a meet order, and shortly afterward both engine crews were looking each other in the eye over a rapidly diminishing piece of track. The enginemen jumped, and "Monk's" brother Frank (the line's only other passenger conductor at the time), feeling the emergency air go on, rushed to the front of the car. He was crushed as the freight engine telescoped the gas car's front end. His seven-year-old son, who was also aboard the train, was injured and has just recently recovered. Several feet of the gas car's front end were clipped off, her power unit ruined; and she was converted to a straight coach. No. 30 was pressed into service as the regularly assigned power, where, with occasional breakdowns, she has remained.

We pull into Saxton, the halfway mark and operations headquarters of the road, and spend a good 20 minutes unloading no mean amount of express into two waiting trucks. From the railroad, Saxton resembles a ghost town just before complete desertion, and the sturdy little youngsters look rather out of place as they play on the crumbling concrete steps that lead up the steep hill to the town.

Leaving Saxton, we round a sharp curve and pass the slumbering shops and roundhouse which are the "Altoona" of the Broad Top. Out on a spur track stands coach No. 14, a classic dating back to the first days of the line's operations. For many years old No. 14 supplied passenger service to the mining town of Dudley, a few miles from Saxton up a branch line into the mountains. The car was the passenger half of a local mixed train going uphill to Dudley. To effect an operation economy on the return trip, she drifted downgrade without power, manned by a trainman who undoubtedly kept a quite

tense grip on the brake wheel. During World War I the road was operated by the Pennsylvania for the convenience of the government, and between Uncle Sam and the PRR, No. 14's downhill escapades came to a halt and were never revived.

We continue south, winding along the Juniata's Raystown branch at the base of the mountains, and soon come to Mount Dallas, end of Broad Top trackage. All that we see here is a standard PRR phonebox mounted on a black pole that has DALLAS tacked to it in large white wooden letters. "Monk" phones for clearance over Pennsy iron for the eight remaining miles into Bedford and we are on our way. The State of Pennsylvania's famous "superhighway" toll turnpike appears frequently, lending a sort of "the new and the old" atmosphere to the scene [TRAINS, Dec. '46]. Then we loose sight of the turnpike and, after passing a few summer cottages, roll into Bedford.

Bedford is a town rich in history — of old Fort Bedford, and of Washington's headquarters during the Whisky Rebellion. It is also a great tourist town, located near the turnpike and only two miles from famed Bedford Springs. During the war, Japanese diplomats and their families were interned at the hotel, much to the indignation of the townspeople, who would probably rather have seen them at work in the coal mines. When time for repatriation came they were carried by bus to Cumberland for movement by rail to the West Coast. Prior to the Jap envoys, a small training school for naval radio men occupied the hotel, and the Broad Top pulled a few troop trains into the mountain city. For such 10- and 12-car trains the H&BT used some of its vitally needed freight engines.

No. 30 cuts off the empty milk car and backs it into the Supplee plant near the Bedford station. Returning, she couples on to the rear of the train and prepares to back to the turntable at Mount Dallas, where, after turning, she will again operate headlight forward. Mrs. Greenleaf comes down to the train carrying a basket of lunch for her husband, and we have a pleasant chat before "Monk" decides to highball out of town. While we are talking, a Pennsylvania L-1

Theodore A. Gay, 624 78th St., Brooklyn, N. Y.

(2-8-2) is out in the small freight yards, shifting the train it pulled northward from Cumberland, Md., this morning. The train operates daily and averages about 20 cars per trip, nearly all of which are delivered from Baltimore & Ohio or Western Maryland points. No passenger service is operated south of Bedford now, but in the days when the Springs attracted travelers by the hundreds and the summertime heat of the wooden coaches melted the wax on grandpa's mustache, the Broad Top operated a solid train of Pennsylvania coaches through from Huntingdon on to Cumberland, 37 miles south of Bedford.

We are late getting out of Bedford, with about four passengers aboard. The turning of No. 30 on the hand-operated turntable at Mount Da'las is accomplished as automobiles whiz overhead on the turnpike, which at this point is cut into the side of the mountain.

We settle back on the cushions to enjoy the return trip, observing that the brown whipcord upholstery looks very familiar. The explanation is simple enough. After the collision in 1942, the officials decided the coach needed a new set of plush and set out to buy some. After an extended and unsuccessful shopping tour, the Broad Top men went to the Pennsylvania's Altoona shops and succeeded in obtaining some of the brown plush used in Pennsylvania coaches. A young carpenter in the Saxton shops, assisted by several seamstresses, did a professional-looking job of re-covering the seats.

The downgrade ride to Huntingdon is quite smooth, a tribute to the Broad Top's diminutive rail. We see some real old-time mountain railroading when we have a meet with a southbound freight. We pull into Huntingdon after making the regular running time of 2 hours 14 minutes for the 52 miles. There's just comfortable time to stretch our legs before Pennsylvania's No. 24 picks us up.

Superintendent Greenleaf and other old-time Broad Top officials would surely groan in their graves were they able to see the few passengers alight from the train and make for the underground passageway to the westbound Pennsy side of the station, for in the old days long trains of coaches would disgorge seemingly endless crowds of holiday travelers onto the same stone platform that now seems so woefully deserted.

The future holds little promise for the game little road; at best it will be a grim fight for existence while coal remains in those historic mountains and as long as a market exists for that coal.

**Back in 1941, No. 30 wore a square headlight↑ which has been replaced by a modern round one. First coach is No. 14, which used to drift downhill with a brakeman in charge. Before collision in 1942, passenger trains usually were powered by this sleek gas-electric car↓.**

A. M. Kung Jr.

C. R. R. OF N. J.
379
ROGERS
C. R. R. OF N. J.
409
ROGERS

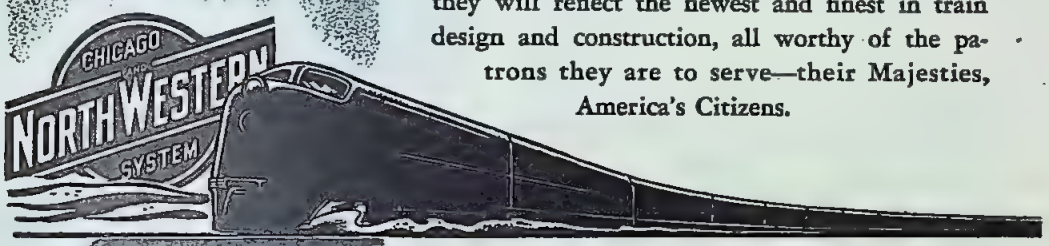
## Old Jersey Central Engines

A thing of grace and beauty was the Rogers locomotive. This old-timer was built at the firm's historic Paterson, N. J., plant for the Central Railroad of New Jersey. The 4-4-0 or American type engine was probably the most popular and most common of all United States engines. Collection of Charles Small, 256 W. 12th St., New York 14, N. Y.

Particularly distinctive of Jersey Central and other anthracite roads is the Mother Hubbard locomotive. The divided cab was used to place enginemen ahead of the wide firebox which was designed by John E. Wootten of the Reading to burn anthracite culm in locomotives. Wootten placed the firebox entirely over the driving wheels so that its width was limited only by the loading gauge. This gave the engines the much larger grate area necessary for burning culm. Charles Small collection.

# NEW Train Horizons

Sometime in 1947 you will see them—five flashing new streamliners, all members of "North Western's" famous "400" Fleet of Diesel-powered beauties. And what a thrill it will be to watch them as they glide smoothly over gleaming rails to become a part of the train horizons of tomorrow! It is too early to give the exact dates of the arrival of the new "400s." Be assured, however, that they will reflect the newest and finest in train design and construction, all worthy of the patrons they are to serve—their Majesties, America's Citizens.




The new trains will include a streamlined

## NORTH WESTERN LIMITED

**overnight between Chicago and St. Paul-Minneapolis**

## Also daytime "400s" between

**Chicago and Omaha-Sioux City**
**Chicago and Rochester-Mankato**
**Chicago and Ashland-Watersmeet**

The spirit of progress that has imbued "North Western" ever since 1848 is in evidence today as never before. New comforts—greater safety—added luxuries—unlooked for conveniences—faster schedules... "North Western" will continue to provide them in unstinted measure. Watch "North Western" in '47!

## CHICAGO and NORTH WESTERN SYSTEM

PIONEER RAILROAD OF CHICAGO AND THE WEST

## Good news for travelers...

# The *Hiawatha* Tribe is expecting a blessed event

*Hiawathas*
NOW SERVE

| | |
|---|---|
| Chicago | Dubuque |
| Milwaukee | Cedar Rapids |
| St. Paul | Des Moines |
| Minneapolis | Omaha |
| Northern Wisconsin | Sioux City |
| | Sioux Falls |

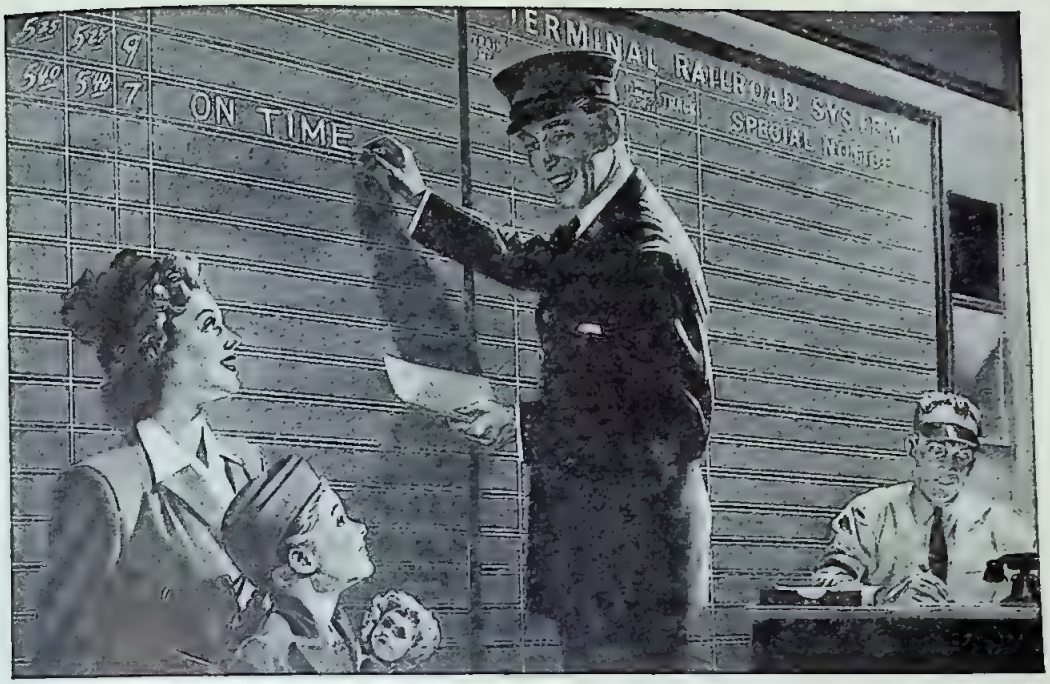
***and soon through the Pacific Northwest***

NOT FAR away now is the great day when the OLYMPIAN HIAWATHAS will take their proud place in the famous HIAWATHA fleet. Serving Chicago-Milwaukee-Twin Cities-Spokane-Seattle-Tacoma, they will operate on a schedule of about 45 hours between Chicago and Puget Sound.

Since 1935, the HIAWATHA Speedliners have topped the field in combining thrilling speed with luxury, silence and riding ease. The OLYMPIAN HIAWATHAS will further this tradition of leadership. Designed and built largely in the Milwaukee Road's own shops, they will offer unique advantages for all classes of travel. Fresh design ideas, unusual beauty, special service features and *no extra fare* will draw whoops of surprise and delight even from experienced travelers. F. N. Hicks, Passenger Traffic Manager, 710 Union Station, Chicago 6, Illinois.

## THE MILWAUKEE ROAD

*The friendly Railroad of the friendly West*




# "ON TIME"

When this man chalks up "On time" on the train-arrivals board, he makes more than a simple report.

It means that businessmen meet their dates. Through travelers make their connections. Homecomers meet those who wait, when expected. On freight it means that materials and products get to their destination promptly.

Thus the amazing record of General Motors Diesel locomotives for being "On time" is tremendously important to millions — besides setting standards hitherto thought impossible.

Records of large railroads show that for all purposes, passenger and freight, General Motors Diesels have met schedules *97% of the time*, exclusive of non-locomotive tie-ups.

In addition to ushering in this new era of prompt railroading — in addition to making faster running time possible—General Motors Diesels also show remarkable operating and maintenance economies.

This means that General Motors Diesels magnificently pay their way. Their savings can help to speed revitalization of lines and advance the luxuries of streamlined transportation which they originally inspired. From this everyone concerned can reap newer and greater benefits.

*"Better trains follow better locomotives"*

GM
GENERAL MOTORS
DIESEL POWER

ELECTRO-MOTIVE DIVISION
LA GRANGE, ILL.
GENERAL MOTORS

# RUNNING EXTRA

When Margot Rossner began working as a typist with Kalmbach Publishing Co. five years ago last fall, she wasn't sure just where her interest lay; but when, a short time later, she was given her choice of working into a secretarial position or taking over the subscription lists of TRAINS and THE MODEL RAILROADER, she chose the latter. It was a wise decision. Today she is supervisor of the subscription department, and she and her two assistants are kept busy entering 1800 new and renewal subscriptions every month as well as sending notices of expiration to 1100 subscribers and changing an average of 400 addresses to keep the mailing list up to date. They also answer all correspondence relating to subscriptions.

When you send in your subscription to TRAINS, you have pushed the button which puts Margot's crew to work. First the subscription is entered. If it's a new one, a mailing plate is punched out on a graphotype machine. If it's a renewal, the old plate is dug out of the "expired" file and the "key" changed to conform to the new expiration date. The plate is then put into the active list and becomes a permanent record of the subscription as well as being the means of addressing the magazine.

Filing the plates is a task in itself. They are filed alphabetically, of course; but not exclusively so. If a subscriber lives in a large city such as Chicago, for example, the plate is filed alphabetically under the proper postal zone number under Chicago under Illinois. That's why it is necessary that persons requesting a change of address must also include their old address. If you move from one city, or even one postal zone, to another, it's practically impossible to find your plate unless you tell Margot where to look for it by giving your old address too.

Besides the more than 30,000 active names on the mailing list, there are thousands more who are included in advertising mailings which are made several times a year. Margot and helpers do all this mailing.

Does Margot like her job? Well, in the more than five years she's been with us, she has lost only five days' time through illness or other indisposition.

# Railroad

### The Immortal Steam Whistle

The passing of the steam-powered train may truly be a great step in this age of progress; but, in one respect at least, it will be one of the saddest changes to take place. When the steam locomotive goes, so will go that loveliest of musical instruments, the steam whistle. I am comparatively young in years, but old enough to know, appreciate, and thrill to the haunting beauty of a train whistle as it floats across a summer evening, shrieks in the bitter cold of a winter sunrise, or cries mournfully in the loneliness of late night. It seems so much a part of the countryside that its eventual passing will seem like the extinction of a familiar bird call or the melody of wind in the trees. Somehow, the blatant matter-of-factness of a Diesel horn honking at crossings is almost pitiful in comparison. For all its utility and progress, the Diesel is sadly unpossessed of the romance that has made and will keep the steam-powered locomotive and its wonderful whistle immortal in its own realm!

Miss Vega Ihsen, Box 64, Fairview, Pa.

### Meaning of "Tehachapi"

Of interest to readers of "Over the Tehachapi" in December TRAINS will be the following from the "Dictionary of California Land Names": "*Tehachapi.* The name of the pass, community and mountains is of Shoshonean Indian origin, being rendered variously as tehichipi, tahichipi, and tahichipiu. Its meaning is unrevealed but legend has interpreted it both as 'the crow's nest' and 'the land of plenty of acorns and good water.' The first settlement, known both as Tehachapi and Greenwich (for P. D. Green, the postmaster), and now known as Old Town and Old Tehachapi, was located about three miles west of the present community. The present town was founded by the Southern Pacific Railroad in 1876 and by 1883 practically the entire populace of Old Tehachapi had moved to the new community."

Arthur C. Davis, 4130 Vinton Ave., Culver City, Calif.

### "Illustrated Catalogue of Oil Engines"

I have gone along with you through your "growing pains" — through the paper shortage — through the weak reproductions of scenes which mean so much to me (e. g., CRRofNJ, page 12, November, 1946, issue). Yes, I have even put up with the colored reproductions that were so blurred that I have made my eyes ache in the endeavor to distinguish the features. But when you start to charge $3 per year for a serial illustrated catalogue of General Motors oil engines, that is going too far.

R. A. Whiting, 160 Olmstead Rd., Riverside, Ill.

### "Too Good to Be True"

From now on I absolutely refuse to be surprised at anything I see and read in TRAINS. Maybe I am prejudiced, but to me it is just too good to be true. Photos, newsbits, articles, mail from readers, and even the ads are, it seems to me, the very acme of good taste, judgment, interest, and entertainment.

J. C. Stansel, 328 Johnston Ave., Trenton 9, N. J.

### Not Mt. San Jacinto

Sorry, but that is not Mt. San Jacinto but Mt. San Gorgonio, popularly known as Greyback, in the photo on pages 36 and 37 of TRAINS for January.

Arthur C. Davis, Automobile Club of California, Los Angeles 54, Calif.

# Mail

### Fireman Prefers Steam

Having worked as a fireman on both Diesel and steam locomotives, it is my opinion that a steam locomotive in good condition will outperform any Diesel. Among the injustices done the steam locomotive is the fact that comparisons are made between new Diesels and steam engines which are 25 to 40 years old. Also, each unit of a Diesel locomotive is actually a locomotive within itself, so a four unit Diesel is in reality four locomotives. The Diesel is good advertising for railroads and is particularly good in sections of the country where water conditions are bad. But don't think for a minute that the steam locomotive is outclassed by the Diesel. The Pennsylvania's T-1 class or NYC's Mohawk should prove this. The steam locomotive will be here for a good many years to come.

G. H. Grimes, Tucson, Ariz.

### Passenger Favors the Diesel

Maybe the dyed-in-the-wool steam fans prefer to cover their eyes and remain blinded to the realities of life. Or maybe they're only trackside watchers of trains who never ride behind their beloved iron horse. Remember, you can't see the engine from inside the train. And all too often, with steam motive power laying a smoke screen, you can't see the scenery from inside the train, either. As a passenger, I'm all in favor of the Diesel. It's smoother, cleaner, and permits an unscreened view of the scenery.

Victor Willard, P. O. Box 108, Muskego, Wis.

### All-Rail Route to Alaska

How about starting a crusade for the construction of the most sorely needed railroad in North America: the all-rail route to Alaska? Alaska can never be developed until she can enjoy rail connection with the 48 states. Her defenselessness was brought home to us sharply during the war. The Alcan Highway was an inadequate and now impassable solution. The steamship lines hold a virtual monopoly, and when they are strikebound it is necessary to fly food in to some of the towns to prevent mass starvation. The military value of this line should make its construction a necessity. As a joint U. S.-Canadian project, funds could easily be arranged for by the two interested governments.

Walter G. Bogel, 171 5th Ave., San Francisco 18, Calif.

### Sorry; It Was Not Intended as Such

I think the Diesel locomotive will stand on its own merits. I believe its growth in popularity is based on consumer satisfaction, cleaner operation, many outstanding efficiencies, etc. I regret exceedingly that you feel disposed to go along with William Dyer of Jersey Central and use the natural desirability of Diesel equipment as an opening for another antilabor blast.

William D. Hammond, 6418 S. Normal Blvd., Chicago 21, Ill.

### New Railroad Song

It is not often that one hears a railroad song on a radio program. It is still less often that a new song about railroads is written. Railfans, particularly those in the South, will be interested to know that a new railroad song, "Tennessee Central No. 9," was introduced by my friend "Pee Wee" Frankie King on one of his recent broadcasts over WSM, Nashville, Tenn.

Jim Scribbins, 1609-A W. Center St., Milwaukee 6, Wis.

# SECOND SECTION

Readers who remember the 36-page first issue of TRAINS, which sold only 5178 copies, often write in to ask how the sales are going now that wartime regulations have been removed. We are printing 48,500 copies of this issue, and the net sale of the September, 1946, issue, last for which all the returns are in, was 32,503. This does not include copies set aside for year-end binding, back-copy sales, free copies to advertisers, nor samples.

Our big problem in the past 18 months has been production and paper supply. The war is far from over as far as magazine printing is concerned. The same two big presses which before the war were printing 17,000 copies of TRAINS and 20,000 copies of THE MODEL RAILROADER have been printing nearly 50,000 of each, and both magazines have nearly doubled in size. The actual number of impressions has multiplied by six. Proper press maintenance has been impossible, and when a chain of gears was stripped recently one press was out of service for more than a week. Just recently a new high-speed unit was installed and last month's cover was the first work off it. The 16-page press we ordered in 1942, which will really be the solution of our production impasse, is now expected by summer.

Paper is a little easier to get, although we still cannot purchase enough of the high-class coated paper we prefer. By summer we expect that our press run can be increased to meet any probable demand. Tell your friends about TRAINS. Every increase in circulation enables us to make more improvement.

* * *

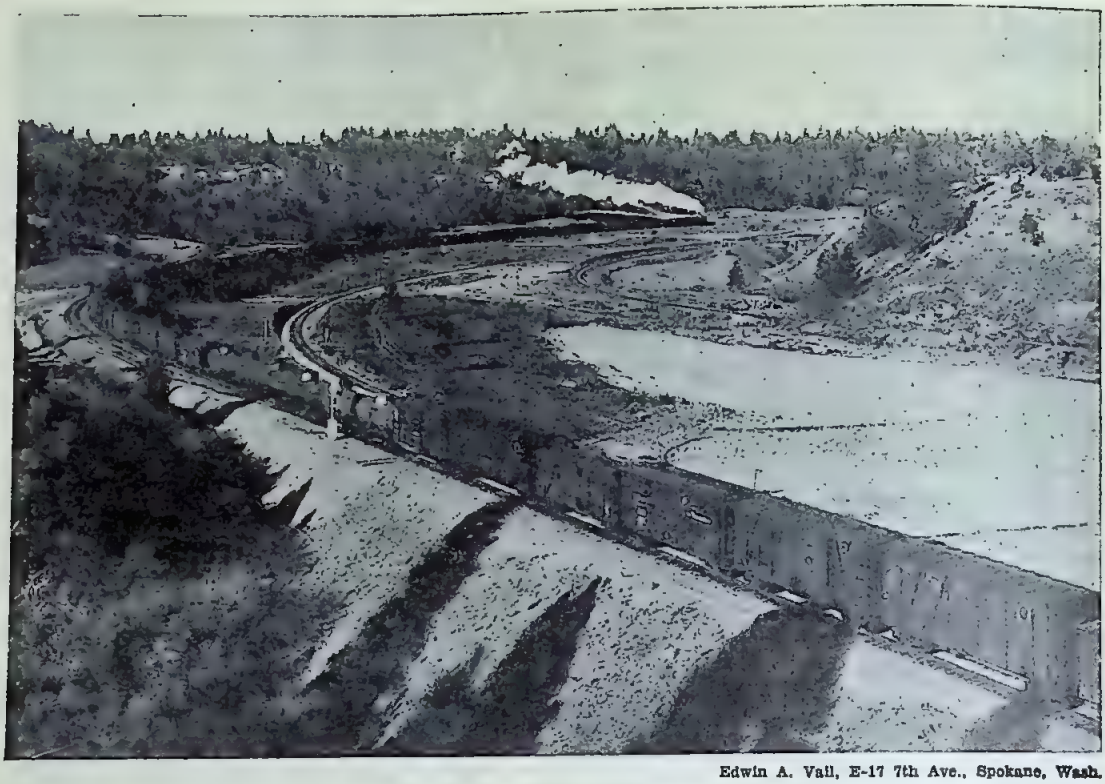
**Now available through our book department: 1946 Car Builders' Cyclopedia, 1412 pages (plus index) of car plans, photos, appliances, etc. Includes dictionary of car terms. $6 postpaid.**

* * *

Hank Kirtland, our comptroller, commutes on the Milwaukee Road between Milwaukee and Pewaukee. One morning recently he came in with the tale of a new conductor on No. 12 who sticks up for his passengers. It seems that the morning local was given orders to go on the siding at Brookfield for No. 16, the *Olympian*. The conductor didn't take this lying down. He went to the phone at Brookfield, called the dispatcher and said he had 300 passengers who had to report for work by 8:30. Furthermore, he said, since the *Olympian* was already late its passengers wouldn't miss another 10 minutes too much. He got permission to go into Milwaukee ahead of No. 16 and the 300 passengers were on time. Now if Hank is late he can't blame it on Milwaukee Road No. 12 anymore.

**KALMBACH PUBLISHING CO.**

**1027 N. 7th St., Milwaukee 3, Wis.**



Edwin A. Vall, E-17 7th Ave., Spokane, Wash.

**Nestled in a valley about 12 miles southwest of Spokane, Wash., are three railroad lines: left, Spokane, Portland & Seattle; center, Union Pacific; right, Northern Pacific. A fourth railroad, the Chicago, Milwaukee, St. Paul & Pacific, has trackage rights over the Union Pacific line and sometimes the orange-colored baggage and mail cars of the Milwaukee Road are included in a UP train, sandwiched between a UP locomotive and UP passenger cars. Freight train is bound for Spokane.**

## Hotbox Alarm

Overheated journals will no longer progress to the hotbox stage on New York Central passenger cars and locomotives equipped with a new device which gives warning of overheating. Two small cylinders of liquids are placed in cavities specially drilled into the journal. Each cylinder has a small orifice sealed with a fusible metal which melts at a predetermined temperature (on roller bearing journals, 220 degrees Fahrenheit). The released liquids are vaporized by the heat of the journal and the resultant gases warn trainmen both by sight and by smell. One cylinder contains liquid ethyl mercaptan, which vaporizes into a penetrating odor; the other contains a combination of titanium tetrachloride and carbon tetrachloride which, upon vaporization, gives off a cloud of smoke. The action continues for about 10 minutes. The device was developed by the engineering equipment department of the New York Central System together with the Magnus Metal Corporation and the Timken Roller Bearing Company.

Courtesy New York Central.

## Class 1 Railroads

Although Class 1 railroads are loosely defined as those having an annual operating revenue of $1 million or more, not all railroads having such revenue are actually in Class 1, and during depression years several Class 1 railroads dropped below the $1 million mark and still remained in Class 1. The classification is based on the *normal* operating revenue, and, once classified, a railroad remains in that class until results over a considerable period indicate that it should be reclassified.

## New Railroad Book

MEN OF ERIE, by Edward Hungerford. Illustrated and indexed, 346 pp., 6" x 8½", $3.75. Published by Random House, New York.

It is an old saying in Wall Street that when the Erie declares a dividend "icicles will freeze in hell." Icicles *did* freeze in that June day of 1942 when the Erie, after a hiatus of nearly 40 years, paid a dividend. The regeneration of what was at one time America's longest railroad is the theme of Edward Hungerford's "Men of Erie." It is a fascinating story of locomotives, cars, and trains; of bridges, stations, and roundhouses; but most of all it is a story of men.

We see the early Erie presidents: Eleazar Lord, the ordained minister who had enough temporal faith in the "new Appian Way" to become its first head: James Gore King, who aided in its early construction; and Benjamin Loder, who saw the road completed to the Great Lakes. The Erie, as Hungerford reveals, had an auspicious youth although its middle years, characterized by the Gould regime, were a period of retrogression and mismanagement. Then came Fred Underwood — and regeneration. What Underwood started, John J. Bernet, Charles E. Denney, and Robert E. Woodruff rounded to completion. The result? A new Erie rebuilt, refinanced, and remanned. Thanks to an aggressive and doggedly persistent management, the road now handles 98 per cent of the citrus and decitrous fruits that come into the great wholesale markets of New York. Even Eleazar Lord's blunder in making the Erie of six foot gauge, costing the company upward of $75 million to convert to standard, happily resulted in wider clearances and greater ability to handle oversize freight, thus giving the railroad extra revenue today.

This is not a definitive history. Rather, it is a sweeping story of a great railroad from the time it was chartered to the present day. We see the building of the great Starrucca Viaduct and the equally majestic Kinsua bridge, both Erie landmarks ancient and sturdy. Even the modern and not-too-dramatic freight has a new meaning and high adventure in the chapter "Erie 98 Rides East." Numerous photos and woodcuts embellish the text, but the index falls short of being wholly adequate.

All in all, the reader upon putting down this latest Hungerford volume feels like saying "Make mine Erie" in his mental travel agenda for that next trip between the Atlantic seaboard and Chicago.—*F. D.*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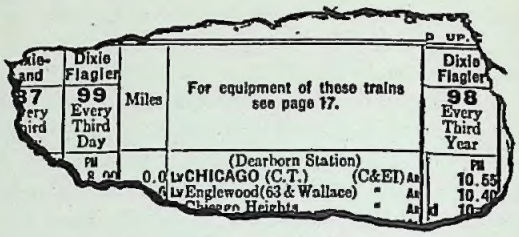


northbound mate, states the timetable, runs every third year. Says Vice-President H. R. Sampson, "You can get out a perfect timetable for years on end and never hear a thing about it, but let something like this slip through and you never hear the end of it."

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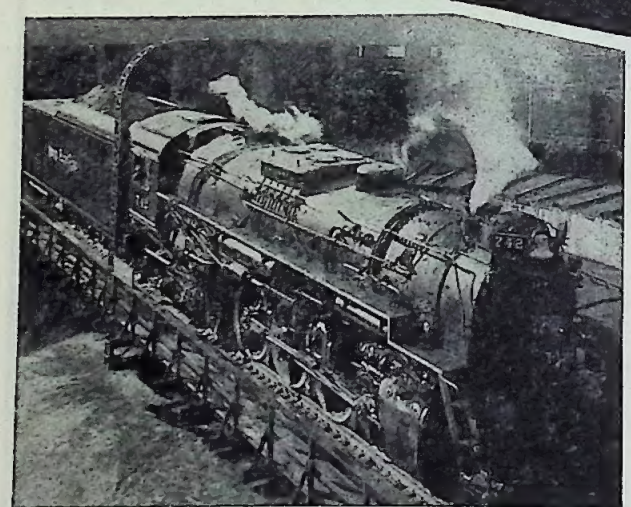

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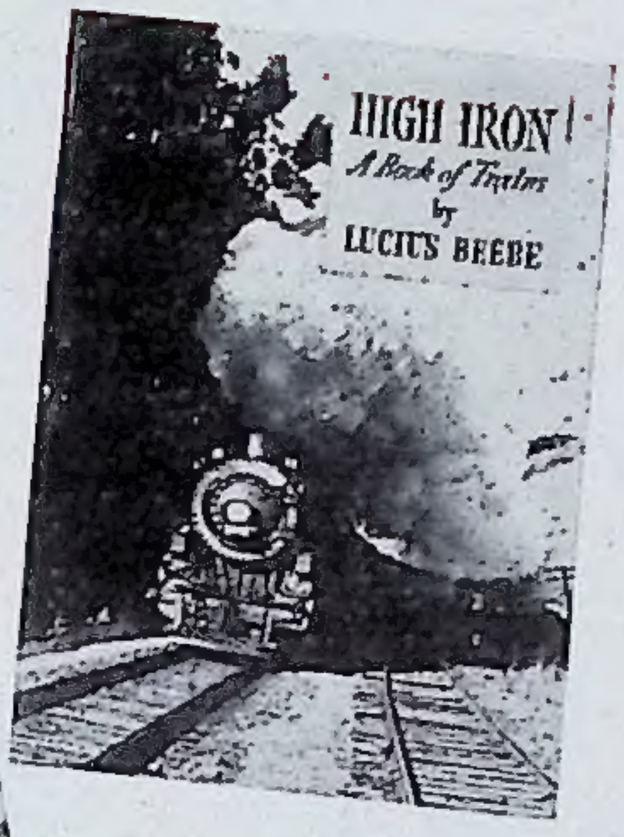


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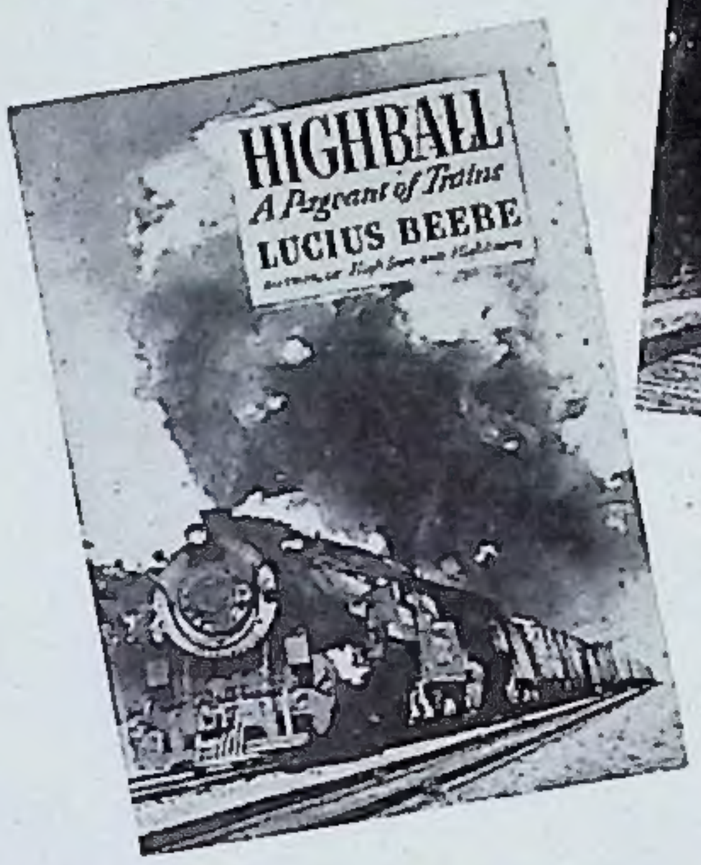

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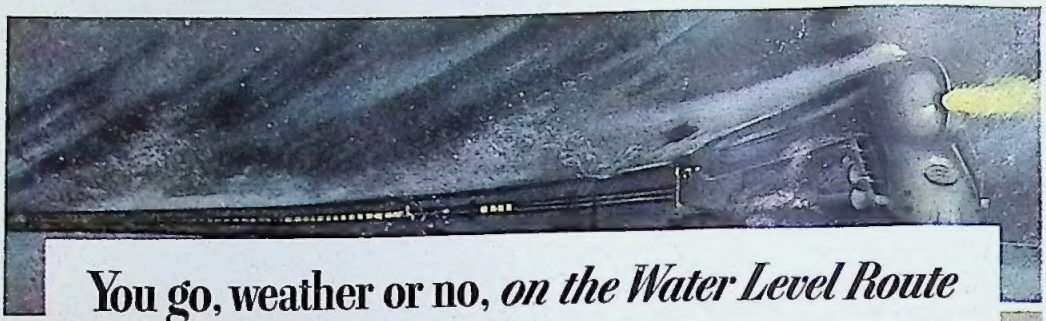

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